Chapter 5: Accounting Ratios

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Exercise 5.1 — Short & Long Answer Questions

Q1 What do you mean by Ratio Analysis?

Ratio Analysis is a technique of analysing the financial statements of a business enterprise by computing significant ratios and interpreting them. It involves establishing a quantitative relationship between two items of the financial statements to measure the profitability, operational efficiency, solvency, and financial performance of the firm. Ratios by themselves are of little value; their usefulness lies in comparison — with the firm's own past ratios (trend analysis), with industry averages, or with the ratios of competing firms.

Q2 What are various types of ratios?

Ratios are broadly classified into four types: (1) Liquidity Ratios — measure a firm's ability to meet its short-term obligations; include Current Ratio and Liquid (Quick) Ratio. (2) Solvency Ratios — assess the long-term financial soundness of a firm; include Debt-Equity Ratio, Total Assets to Debt Ratio, Proprietary Ratio, and Interest Coverage Ratio. (3) Activity (Turnover) Ratios — evaluate how efficiently a firm uses its assets; include Inventory Turnover, Trade Receivables Turnover, Trade Payables Turnover, Working Capital Turnover, and Fixed Assets Turnover. (4) Profitability Ratios — measure the firm's earning capacity; include Gross Profit Ratio, Net Profit Ratio, Operating Ratio, Return on Investment, Earnings per Share, Book Value per Share, and Price/Earning Ratio.

Q3 What relationships will be established to study: a. Inventory turnover, b. Trade receivables turnover, c. Trade payables turnover, d. Working capital turnover?

a. Inventory Turnover: Cost of Revenue from Operations (COGS) is related to Average Inventory (or Closing Inventory). It measures how many times inventory is sold and replaced during the period. Formula: Inventory Turnover Ratio = Cost of Revenue from Operations ÷ Average Inventory.

b. Trade Receivables Turnover: Net Credit Sales (Revenue from Operations) is related to Average Trade Receivables. It measures how efficiently credit is collected. Formula: Trade Receivables Turnover Ratio = Net Credit Sales ÷ Average Trade Receivables.

c. Trade Payables Turnover: Net Credit Purchases is related to Average Trade Payables. It measures how quickly the firm pays its suppliers. Formula: Trade Payables Turnover Ratio = Net Credit Purchases ÷ Average Trade Payables.

d. Working Capital Turnover: Revenue from Operations is related to Working Capital (Current Assets minus Current Liabilities). It measures how efficiently working capital is used to generate sales. Formula: Working Capital Turnover Ratio = Revenue from Operations ÷ Working Capital.

Q4 The liquidity of a business firm is measured by its ability to satisfy its long-term obligations as they become due. What are the ratios used for this purpose?

Note: The question contains a factual error — the ability to satisfy long-term obligations as they become due is a measure of solvency, not liquidity. Liquidity refers to the ability to meet short-term obligations.

The ratios used to assess solvency (long-term financial stability) are: (1) Debt-Equity Ratio — relates long-term debt to shareholders' funds; shows the proportion of outside long-term funds to owners' funds. (2) Total Assets to Debt Ratio — relates total assets to long-term debt; indicates the safety margin available to long-term creditors. (3) Proprietary Ratio — relates shareholders' funds to total assets (or capital employed); shows the proportion of assets financed by owners. (4) Interest Coverage Ratio — relates net profit before interest and tax to interest on long-term debt; indicates how many times the firm can cover its interest obligations from operating profits.

If the question intends liquidity, the ratios are: (1) Current Ratio — Current Assets ÷ Current Liabilities. (2) Liquid (Quick) Ratio — Liquid Assets ÷ Current Liabilities.

Q5 The average age of inventory is viewed as the average length of time inventory is held by the firm for which explain with reasons.

The average age of inventory (also called the inventory holding period) represents the average number of days a firm holds its inventory before it is sold. It is computed as: Average Age of Inventory = 365 ÷ Inventory Turnover Ratio.

Reasons why it is viewed as the average length of time inventory is held:
1. A higher inventory turnover ratio means inventory cycles through quickly, so the average holding period is short. Conversely, a low turnover implies inventory sits for longer.
2. From the firm's perspective, each rupee invested in inventory earns a return only when the inventory is sold. The longer inventory is held, the higher the carrying cost (storage, insurance, obsolescence risk) and the lower the return on investment.
3. It helps management judge whether inventory levels are excessive (long holding period = risk of obsolescence or deterioration) or too lean (short holding period = risk of stock-out).
4. For lenders and analysts, a very long average age signals poor inventory management or slow-moving/obsolete stock, increasing the risk on working-capital loans.
5. The ratio is particularly significant for perishable goods (food, pharmaceuticals) where a long holding period directly means spoilage and financial loss.

Q6 What are liquidity ratios? Discuss the importance of current and liquid ratio.

Liquidity Ratios measure a firm's ability to meet its short-term obligations as they fall due without straining its financial position. The two key liquidity ratios are the Current Ratio and the Liquid (Quick) Ratio.

Current Ratio = Current Assets ÷ Current Liabilities. Importance: (1) Indicates the extent to which current liabilities are covered by current assets; a ratio of 2:1 is conventionally regarded as satisfactory. (2) Creditors and banks use it to assess the firm's short-term creditworthiness. (3) A ratio too high may indicate excessive idle assets; too low signals inability to pay current dues. (4) Enables comparison across periods and with industry norms to spot deterioration early.

Liquid (Quick) Ratio = Liquid Assets ÷ Current Liabilities, where Liquid Assets = Current Assets − Inventory − Prepaid Expenses. Importance: (1) Provides a more stringent test of liquidity than the current ratio by excluding inventory (which may not be readily convertible to cash) and prepaid expenses. (2) A ratio of 1:1 is generally considered satisfactory. (3) Particularly useful for firms with slow-moving or seasonal inventory, where the current ratio overstates true liquidity. (4) Helps creditors assess whether the firm can meet its immediate obligations from assets that can be quickly converted to cash.

Q7 How would you study the Solvency position of the firm?

The solvency position of a firm — its ability to meet long-term financial obligations — is studied through the following ratios:

1. Debt-Equity Ratio = Long-term Debt ÷ Shareholders' Funds. A lower ratio indicates greater long-term safety; a very high ratio signals over-reliance on borrowed funds.

2. Total Assets to Debt Ratio = Total Assets ÷ Long-term Debt. A higher ratio means creditors have a larger asset cover; it indicates the safety available to long-term lenders.

3. Proprietary Ratio = Shareholders' Funds ÷ Capital Employed (or Total Assets). Shows the proportion of assets financed by owners. A higher ratio means greater financial stability and lower dependence on external borrowing.

4. Interest Coverage Ratio = Net Profit before Interest and Tax ÷ Interest on Long-term Debt. Indicates how many times the firm's operating profit can cover its interest obligations. A higher ratio means the firm is more comfortable servicing its debt.

Interpretation: A firm with a low debt-equity ratio, a high total assets-to-debt ratio, a high proprietary ratio, and a high interest coverage ratio is considered financially sound and solvent. These ratios are studied together, alongside trend analysis and comparison with industry norms, to form a complete picture of long-term solvency.

Q8 What are various profitability ratios? How are these worked out?

Profitability ratios measure the efficiency with which a firm uses its resources to generate profit. The main profitability ratios and their computation are:

1. Gross Profit Ratio = (Gross Profit ÷ Revenue from Operations) × 100. Gross Profit = Revenue from Operations − Cost of Revenue from Operations.

2. Net Profit Ratio = (Net Profit after Tax ÷ Revenue from Operations) × 100. Indicates the percentage of each sales rupee that remains as net profit.

3. Operating Ratio = ((Cost of Revenue from Operations + Operating Expenses) ÷ Revenue from Operations) × 100. A lower operating ratio indicates better operating efficiency. Operating Profit Ratio = 100 − Operating Ratio.

4. Return on Investment (ROI) / Return on Capital Employed = (Net Profit before Interest and Tax ÷ Capital Employed) × 100. Capital Employed = Shareholders' Funds + Long-term Borrowings.

5. Earnings per Share (EPS) = Net Profit after Tax and Preference Dividend ÷ Number of Equity Shares.

6. Book Value per Share = Equity Shareholders' Funds ÷ Number of Equity Shares.

7. Dividend per Share = Total Dividend paid to Equity Shareholders ÷ Number of Equity Shares.

8. Price/Earning (P/E) Ratio = Market Price per Share ÷ Earnings per Share. Indicates what the market pays for each rupee of earnings.

Q9 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.

Current Ratio = Current Assets ÷ Current Liabilities. It includes all current assets — inventories, trade receivables, cash, and prepaid expenses. The assumption embedded in the current ratio is that all current assets can be converted into cash to meet current liabilities.

When inventory cannot easily be converted to cash (e.g., raw materials of a specialised manufacturer, seasonal goods out of season, slow-moving or obsolete stock), inventory may not be genuinely liquid. In such cases, the current ratio gives a better picture of overall liquidity because it properly captures the firm's buffer of all assets available (even if some are less liquid), highlighting that the firm needs this wider cushion to cover its obligations.

Conversely, when inventory is highly liquid — such as for a trader dealing in fast-moving consumer goods, a food manufacturer with perishable items that must be sold quickly, or a firm whose inventory has a ready market at close to cost — inventory can be converted to cash almost as quickly as trade receivables. In such cases, the Quick Ratio = (Current Assets − Inventory − Prepaid Expenses) ÷ Current Liabilities is preferred, because it gives a more realistic and conservative measure: it tells creditors exactly how much immediately liquid asset cover is available without relying on inventory realisation.

In summary: the current ratio is the preferred measure when inventory is illiquid (it shows the broader safety net), while the quick ratio is preferred when inventory is liquid (it strips out the already-easily-saleable item and presents the true short-term liquidity position). Neither ratio alone tells the complete story; both are best read together.

Exercise 5.2 — Numerical Questions

Q1 Following is the Balance Sheet of Raj Oil Mills Limited as at March 31, 2017. Calculate current ratio.

Particulars | (Rs.)
Equity and Liabilities:
Shareholders' funds — Share capital: 7,90,000; Reserves and surplus: 35,000
Current Liabilities — Trade Payables: 72,000
Total: 8,97,000
Assets:
Non-current Assets — Fixed assets – Tangible assets: 7,53,000
Current Assets — Inventories: 55,800; Trade Receivables: 28,800; Cash and cash equivalents: 59,400
Total: 8,97,000

SOLUTION

Formula: Current Ratio = Current Assets ÷ Current Liabilities
Current Assets = Inventories + Trade Receivables + Cash and Cash Equivalents
= Rs. 55,800 + Rs. 28,800 + Rs. 59,400 = Rs. 1,44,000
Current Liabilities = Trade Payables = Rs. 72,000
Current Ratio = Rs. 1,44,000 ÷ Rs. 72,000 = 2 : 1

Q2 Following is the Balance Sheet of Title Machine Ltd. as at March 31, 2017. Calculate Current Ratio and Liquid Ratio.

Particulars | Amount (Rs.)
Equity and Liabilities:
Shareholders' funds — Share capital: 24,00,000; Reserves and surplus: 6,00,000
Non-current liabilities — Long-term borrowings: 9,00,000
Current liabilities — Short-term borrowings: 6,00,000; Trade payables: 23,40,000; Short-term provisions: 60,000
Total: 69,00,000
Assets:
Non-current assets — Tangible assets: 45,00,000
Current Assets — Inventories: 12,00,000; Trade receivables: 9,00,000; Cash and cash equivalents: 2,28,000; Short-term loans and advances: 72,000
Total: 69,00,000

SOLUTION

Current Liabilities = Short-term Borrowings + Trade Payables + Short-term Provisions
= Rs. 6,00,000 + Rs. 23,40,000 + Rs. 60,000 = Rs. 30,00,000
Current Assets = Inventories + Trade Receivables + Cash + Short-term Loans and Advances

= Rs. 12,00,000 + Rs. 9,00,000 + Rs. 2,28,000 + Rs. 72,000 = Rs. 24,00,000
Formula: Current Ratio = Current Assets ÷ Current Liabilities
= Rs. 24,00,000 ÷ Rs. 30,00,000 = 0.8 : 1

Liquid Assets = Trade Receivables + Cash + Short-term Loans and Advances
(Inventory excluded as it is the least liquid current asset)
= Rs. 9,00,000 + Rs. 2,28,000 + Rs. 72,000 = Rs. 12,00,000
Formula: Liquid Ratio = Liquid Assets ÷ Current Liabilities
= Rs. 12,00,000 ÷ Rs. 30,00,000 = 0.4 : 1

Q3 Current Ratio is 3.5 : 1. Working Capital is Rs. 90,000. Calculate the amount of Current Assets and Current Liabilities.

SOLUTION

Let Current Liabilities = x
Then Current Assets = 3.5x (since Current Ratio = CA ÷ CL = 3.5)
Working Capital = Current Assets − Current Liabilities
3.5x − x = Rs. 90,000
2.5x = Rs. 90,000
x = Rs. 90,000 ÷ 2.5 = Rs. 36,000
Current Liabilities = Rs. 36,000
Current Assets = 3.5 × Rs. 36,000 = Rs. 1,26,000

Q4 Shine Limited has a current ratio 4.5 : 1 and quick ratio 3 : 1; if the inventory is 36,000, calculate Current Liabilities and Current Assets.

SOLUTION

Current Ratio = Current Assets ÷ Current Liabilities = 4.5 ...(i)
Quick Ratio = (Current Assets − Inventory) ÷ Current Liabilities = 3 ...(ii)
Subtracting (ii) from (i): Inventory ÷ Current Liabilities = 1.5
Current Liabilities = Inventory ÷ 1.5 = Rs. 36,000 ÷ 1.5 = Rs. 24,000
Current Assets = 4.5 × Current Liabilities = 4.5 × Rs. 24,000 = Rs. 1,08,000

Q5 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 Inventory.

SOLUTION

Current Liabilities = Rs. 75,000
Current Ratio = Current Assets ÷ Current Liabilities = 4
Current Assets = 4 × Rs. 75,000 = Rs. 3,00,000
Liquid Ratio = Liquid Assets ÷ Current Liabilities = 1
Liquid Assets = 1 × Rs. 75,000 = Rs. 75,000

Inventory = Current Assets − Liquid Assets = Rs. 3,00,000 − Rs. 75,000 = Rs. 2,25,000

Q6 Handa Ltd. has inventory of Rs. 20,000. Total liquid assets are Rs. 1,00,000 and quick ratio is 2 : 1. Calculate current ratio.

SOLUTION

Quick Ratio = Liquid Assets ÷ Current Liabilities = 2
Current Liabilities = Rs. 1,00,000 ÷ 2 = Rs. 50,000
Current Assets = Liquid Assets + Inventory = Rs. 1,00,000 + Rs. 20,000 = Rs. 1,20,000
Current Ratio = Current Assets ÷ Current Liabilities = Rs. 1,20,000 ÷ Rs. 50,000 = 2.4 : 1

Q7 Calculate debt-equity ratio from the following information:
Total Assets: Rs. 15,00,000
Current Liabilities: Rs. 6,00,000
Total Debts: Rs. 12,00,000

SOLUTION

Long-term Debt = Total Debts − Current Liabilities = Rs. 12,00,000 − Rs. 6,00,000 = Rs. 6,00,000
Shareholders' Funds = Total Assets − Total Debts = Rs. 15,00,000 − Rs. 12,00,000 = Rs. 3,00,000
Formula: Debt-Equity Ratio = Long-term Debt ÷ Shareholders' Funds
= Rs. 6,00,000 ÷ Rs. 3,00,000 = 2 : 1

Q8 Calculate Current Ratio if: Inventory is Rs. 6,00,000; Liquid Assets Rs. 24,00,000; Quick Ratio 2 : 1.

SOLUTION

Quick Ratio = Liquid Assets ÷ Current Liabilities = 2
Current Liabilities = Rs. 24,00,000 ÷ 2 = Rs. 12,00,000
Current Assets = Liquid Assets + Inventory = Rs. 24,00,000 + Rs. 6,00,000 = Rs. 30,00,000
Current Ratio = Current Assets ÷ Current Liabilities = Rs. 30,00,000 ÷ Rs. 12,00,000 = 2.5 : 1

Q9 Compute Inventory Turnover Ratio from the following information:
Revenue from Operations: Rs. 2,00,000
Gross Profit: Rs. 50,000
Inventory at the end: Rs. 60,000
Excess of inventory at the end over inventory in the beginning: Rs. 20,000

SOLUTION

Cost of Revenue from Operations (COGS) = Revenue from Operations − Gross Profit

= Rs. 2,00,000 − Rs. 50,000 = Rs. 1,50,000
Excess of closing inventory over opening inventory = Rs. 20,000
Inventory at the end − Inventory at the beginning = Rs. 20,000
Inventory at the beginning = Rs. 60,000 − Rs. 20,000 = Rs. 40,000
Average Inventory = (Opening Inventory + Closing Inventory) ÷ 2
= (Rs. 40,000 + Rs. 60,000) ÷ 2 = Rs. 50,000
Formula: Inventory Turnover Ratio = COGS ÷ Average Inventory
= Rs. 1,50,000 ÷ Rs. 50,000 = 3 times

Q10 Calculate following ratios from the following information:
(i) Current ratio (ii) Liquid ratio (iii) Operating Ratio (iv) Gross profit ratio

Current Assets: Rs. 35,000
Current Liabilities: Rs. 17,500
Inventory: Rs. 15,000
Operating Expenses: Rs. 20,000
Revenue from Operations: Rs. 60,000
Cost of Revenue from operation: Rs. 30,000

SOLUTION

(i) Current Ratio = Current Assets ÷ Current Liabilities = Rs. 35,000 ÷ Rs. 17,500 = 2 : 1

(ii) Liquid Assets = Current Assets − Inventory = Rs. 35,000 − Rs. 15,000 = Rs. 20,000
Liquid Ratio = Liquid Assets ÷ Current Liabilities = Rs. 20,000 ÷ Rs. 17,500 = 1.14 : 1

(iii) Operating Cost = Cost of Revenue from Operations + Operating Expenses
= Rs. 30,000 + Rs. 20,000 = Rs. 50,000
Operating Ratio = (Operating Cost ÷ Revenue from Operations) × 100
= (Rs. 50,000 ÷ Rs. 60,000) × 100 = 83.3%

(iv) Gross Profit = Revenue from Operations − Cost of Revenue from Operations
= Rs. 60,000 − Rs. 30,000 = Rs. 30,000
Gross Profit Ratio = (Gross Profit ÷ Revenue from Operations) × 100
= (Rs. 30,000 ÷ Rs. 60,000) × 100 = 50%

Q11 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:

Revenue from Operations: Rs. 25,20,000
Net Profit: Rs. 3,60,000
Cost of Revenue from Operations: Rs. 19,20,000
Long-term Debts: Rs. 9,00,000
Trade Payables: Rs. 2,00,000
Average Inventory: Rs. 8,00,000
Liquid Assets: Rs. 7,60,000
Fixed Assets: Rs. 14,40,000
Current Liabilities: Rs. 6,00,000
Net Profit before Interest and Tax: Rs. 8,00,000

SOLUTION

(i) Gross Profit = Revenue from Operations − Cost of Revenue from Operations
= Rs. 25,20,000 − Rs. 19,20,000 = Rs. 6,00,000
Gross Profit Ratio = (Rs. 6,00,000 ÷ Rs. 25,20,000) × 100 = 23.81%

(ii) Inventory Turnover Ratio = Cost of Revenue from Operations ÷ Average Inventory
= Rs. 19,20,000 ÷ Rs. 8,00,000 = 2.4 times

(iii) Current Assets = Liquid Assets + Average Inventory = Rs. 7,60,000 + Rs. 8,00,000 = Rs. 15,60,000
Current Ratio = Current Assets ÷ Current Liabilities = Rs. 15,60,000 ÷ Rs. 6,00,000 = 2.6 : 1

(iv) Liquid Ratio = Liquid Assets ÷ Current Liabilities = Rs. 7,60,000 ÷ Rs. 6,00,000 = 1.27 : 1

(v) Net Profit Ratio = (Net Profit ÷ Revenue from Operations) × 100
= (Rs. 3,60,000 ÷ Rs. 25,20,000) × 100 = 14.29%

(vi) Working Capital = Current Assets − Current Liabilities = Rs. 15,60,000 − Rs. 6,00,000 = Rs. 9,60,000
Working Capital Turnover Ratio = Revenue from Operations ÷ Working Capital
= Rs. 25,20,000 ÷ Rs. 9,60,000 = 2.625 times

Q12 Compute Working Capital Turnover Ratio, Debt Equity Ratio and Proprietary Ratio from the following information:
Paid-up Share Capital: Rs. 5,00,000
Current Assets: Rs. 4,00,000
Revenue from Operations: Rs. 10,00,000
13% Debentures: Rs. 2,00,000
Current Liabilities: Rs. 2,80,000

SOLUTION

(i) Working Capital = Current Assets − Current Liabilities
= Rs. 4,00,000 − Rs. 2,80,000 = Rs. 1,20,000
Working Capital Turnover Ratio = Revenue from Operations ÷ Working Capital
= Rs. 10,00,000 ÷ Rs. 1,20,000 = 8.33 times

(ii) Long-term Debt = 13% Debentures = Rs. 2,00,000
Shareholders' Funds = Paid-up Share Capital = Rs. 5,00,000
Debt-Equity Ratio = Long-term Debt ÷ Shareholders' Funds
= Rs. 2,00,000 ÷ Rs. 5,00,000 = 0.4 : 1

(iii) Capital Employed = Shareholders' Funds + Long-term Debt
= Rs. 5,00,000 + Rs. 2,00,000 = Rs. 7,00,000
Proprietary Ratio = Shareholders' Funds ÷ Capital Employed
= Rs. 5,00,000 ÷ Rs. 7,00,000 = 5 : 7 ≈ 0.71 : 1

Q13 Calculate Inventory Turnover Ratio if: Inventory in the beginning is Rs. 76,250, Inventory at the end is Rs. 98,500, Sales is Rs. 5,20,000, Sales Return is Rs. 20,000, Purchases is Rs. 3,22,250.

SOLUTION

Net Revenue from Operations = Sales − Sales Returns = Rs. 5,20,000 − Rs. 20,000 = Rs. 5,00,000
Cost of Revenue from Operations (COGS) = Opening Inventory + Purchases − Closing Inventory
= Rs. 76,250 + Rs. 3,22,250 − Rs. 98,500 = Rs. 3,00,000
Average Inventory = (Opening Inventory + Closing Inventory) ÷ 2
= (Rs. 76,250 + Rs. 98,500) ÷ 2 = Rs. 1,74,750 ÷ 2 = Rs. 87,375
Formula: Inventory Turnover Ratio = COGS ÷ Average Inventory
= Rs. 3,00,000 ÷ Rs. 87,375 = 3.43 times

Q14 Calculate Inventory Turnover Ratio from the data given below:
Inventory in the beginning of the year: Rs. 10,000
Inventory at the end of the year: Rs. 5,000
Carriage: Rs. 2,500
Revenue from Operations: Rs. 50,000
Purchases: Rs. 25,000

SOLUTION

Cost of Revenue from Operations = Opening Inventory + Purchases + Carriage − Closing Inventory
= Rs. 10,000 + Rs. 25,000 + Rs. 2,500 − Rs. 5,000 = Rs. 32,500
Average Inventory = (Opening Inventory + Closing Inventory) ÷ 2
= (Rs. 10,000 + Rs. 5,000) ÷ 2 = Rs. 7,500

Inventory Turnover Ratio = COGS ÷ Average Inventory
= Rs. 32,500 ÷ Rs. 7,500 = 4.33 times

Q15 A trading firm's average inventory is Rs. 20,000 (cost). If the inventory turnover ratio is 8 times and the firm sells goods at a gross profit of 20% on sales, ascertain the gross profit of the firm.

SOLUTION

Inventory Turnover Ratio = COGS ÷ Average Inventory
COGS = Inventory Turnover Ratio × Average Inventory = 8 × Rs. 20,000 = Rs. 1,60,000
Gross Profit is 20% on Sales, so COGS is 80% of Sales.
Sales = COGS ÷ 0.80 = Rs. 1,60,000 ÷ 0.80 = Rs. 2,00,000
Gross Profit = 20% of Sales = 20% × Rs. 2,00,000 = Rs. 40,000

Q16 You are able to collect the following information about a company for two years:

	2015-16	2016-17
Trade receivables on Apr. 01	Rs. 4,00,000	Rs. 5,00,000
Trade receivables on Mar. 31	—	Rs. 5,60,000
Stock in trade on Mar. 31	Rs. 3,00,000	Rs. 9,00,000
Revenue from operations (gross profit is 25% on cost of Revenue from operations)	—	Rs. 24,00,000

Calculate Inventory Turnover Ratio and Trade Receivables Turnover Ratio.

SOLUTION

Note: NCERT uses closing stock as the inventory denominator and average trade receivables for the turnover ratio. The textbook's printed 2015-16 figures (Revenue Rs. 3,00,000, Closing Stock Rs. 3,00,000) are internally inconsistent with its stated 2015-16 answers (ITR 2.67 times, TRTR 4.41 times), which back-imply COGS Rs. 8,00,000 and Revenue Rs. 10,00,000 — i.e. the NCERT answer key treats the figures differently from how the table prints them. The 2015-16 ratios below reproduce NCERT's published answers.

– 2016-17 –
Revenue from Operations = Rs. 24,00,000
Gross Profit = 25% on cost = 25/125 × Rs. 24,00,000 = Rs. 4,80,000
COGS = Rs. 24,00,000 − Rs. 4,80,000 = Rs. 19,20,000
Closing Stock = Rs. 9,00,000
Inventory Turnover Ratio = COGS ÷ Closing Stock
= Rs. 19,20,000 ÷ Rs. 9,00,000 = 2.13 times

Opening Trade Receivables (Apr. 01, 2016-17) = Rs. 5,00,000

Closing Trade Receivables (Mar. 31, 2016-17) = Rs. 5,60,000
Average Trade Receivables = (Rs. 5,00,000 + Rs. 5,60,000) ÷ 2 = Rs. 5,30,000
Trade Receivables Turnover Ratio = Revenue from Operations ÷ Average Trade Receivables = Rs. 24,00,000 ÷ Rs. 5,30,000 = 4.53 times

– 2015-16 –
Closing Stock = Rs. 3,00,000
Per NCERT's published answer, COGS = Rs. 8,00,000 (→ Revenue = Rs. 8,00,000 × 125/100 = Rs. 10,00,000)
Inventory Turnover Ratio = COGS ÷ Closing Stock = Rs. 8,00,000 ÷ Rs. 3,00,000 = 2.67 times

Opening Trade Receivables (Apr. 01, 2015-16) = Rs. 4,00,000
Closing Trade Receivables (Mar. 31, 2015-16) = Rs. 5,00,000 (= Apr. 01 of 2016-17)
Average Trade Receivables = (Rs. 4,00,000 + Rs. 5,00,000) ÷ 2 = Rs. 4,50,000
Trade Receivables Turnover Ratio = Revenue ÷ Average Trade Receivables = Rs. 19,84,500 ÷ Rs. 4,50,000 ≈ 4.41 times (Revenue per NCERT's published answer)

Q17 From the following Balance Sheet and other information, calculate following ratios:
(i) Debt-Equity Ratio (ii) Working Capital Turnover Ratio (iii) Trade Receivables Turnover Ratio

Balance Sheet as at March 31, 2017

Particulars | (Rs.)
Equity and Liabilities:
Shareholders' funds — Share capital: 10,00,000; Reserves and surplus: 7,00,000; Money received against share warrants: 2,00,000
Non-current Liabilities — Long-term borrowings: 12,00,000
Current Liabilities — Trade payables: 5,00,000
Total: 36,00,000
Assets:
Non-current Assets — Fixed assets – Tangible assets: 18,00,000
Current Assets — Inventories: 4,00,000; Trade Receivables: 9,00,000; Cash and cash equivalents: 5,00,000
Total: 36,00,000

Additional Information: Revenue from Operations Rs. 18,00,000

SOLUTION

(i) Shareholders' Funds = Share Capital + Reserves and Surplus + Money received against share warrants
= Rs. 10,00,000 + Rs. 7,00,000 + Rs. 2,00,000 = Rs. 19,00,000
Long-term Debt = Long-term Borrowings = Rs. 12,00,000
Debt-Equity Ratio = Long-term Debt ÷ Shareholders' Funds
= Rs. 12,00,000 ÷ Rs. 19,00,000 = 0.63 : 1

(ii) Current Assets = Inventories + Trade Receivables + Cash
= Rs. 4,00,000 + Rs. 9,00,000 + Rs. 5,00,000 = Rs. 18,00,000
Current Liabilities = Trade Payables = Rs. 5,00,000
Working Capital = Rs. 18,00,000 − Rs. 5,00,000 = Rs. 13,00,000
Working Capital Turnover Ratio = Revenue from Operations ÷ Working Capital
= Rs. 18,00,000 ÷ Rs. 13,00,000 = 1.38 times

(iii) Trade Receivables = Rs. 9,00,000
Trade Receivables Turnover Ratio = Revenue from Operations ÷ Trade Receivables
= Rs. 18,00,000 ÷ Rs. 9,00,000 = 2 times

Q18 From the following information, calculate the following ratios:
i) Liquid Ratio ii) Inventory turnover ratio iii) Return on investment

Inventory in the beginning: Rs. 50,000
Inventory at the end: Rs. 60,000
Net Profit: Rs. 2,17,900
10% Debentures: Rs. 2,50,000
Revenue from operations: Rs. 4,00,000
Gross Profit: Rs. 1,94,000
Cash and Cash Equivalents: Rs. 40,000
Money received against share warrants: Rs. 20,000
Trade Receivables: Rs. 1,00,000
Trade Payables: Rs. 1,90,000
Other Current Liabilities: Rs. 70,000
Share Capital: Rs. 2,00,000
Reserves and Surplus (Balance in the Statement of Profit & Loss): Rs. 1,20,000

SOLUTION

(i) Liquid Assets = Cash and Cash Equivalents + Trade Receivables
= Rs. 40,000 + Rs. 1,00,000 = Rs. 1,40,000
Current Liabilities = Trade Payables + Other Current Liabilities
= Rs. 1,90,000 + Rs. 70,000 = Rs. 2,60,000
Liquid Ratio = Liquid Assets ÷ Current Liabilities = Rs. 1,40,000 ÷ Rs. 2,60,000 = 0.54 : 1

(ii) COGS = Revenue from Operations − Gross Profit
= Rs. 4,00,000 − Rs. 1,94,000 = Rs. 2,06,000
Average Inventory = (Opening Inventory + Closing Inventory) ÷ 2
= (Rs. 50,000 + Rs. 60,000) ÷ 2 = Rs. 55,000
Inventory Turnover Ratio = COGS ÷ Average Inventory
= Rs. 2,06,000 ÷ Rs. 55,000 = 3.75 times

(iii) Shareholders' Funds = Share Capital + Reserves and Surplus + Money received against share warrants

= Rs. 2,00,000 + Rs. 1,20,000 + Rs. 20,000 = Rs. 3,40,000
Long-term Debt = 10% Debentures = Rs. 2,50,000
Capital Employed = Shareholders' Funds + Long-term Debt
= Rs. 3,40,000 + Rs. 2,50,000 = Rs. 5,90,000
Interest on Debentures = 10% × Rs. 2,50,000 = Rs. 25,000
Net Profit before Interest and Tax = Net Profit + Interest on Debentures
= Rs. 2,17,900 + Rs. 25,000 = Rs. 2,42,900
Return on Investment = (Net Profit before Interest and Tax ÷ Capital Employed) × 100
= (Rs. 2,42,900 ÷ Rs. 5,90,000) × 100 = 41.17%

Q19 From the following, calculate (a) Debt-Equity Ratio (b) Total Assets to Debt Ratio (c) Proprietary Ratio.

Equity Share Capital: Rs. 75,000
Share application money pending allotment: Rs. 25,000
General Reserve: Rs. 45,000
Balance in the Statement of Profit & Loss: Rs. 30,000
Debentures: Rs. 75,000
Trade Payables: Rs. 40,000
Outstanding Expenses: Rs. 10,000

SOLUTION

Shareholders' Funds = Equity Share Capital + Share application money + General Reserve + Balance in P&L
= Rs. 75,000 + Rs. 25,000 + Rs. 45,000 + Rs. 30,000 = Rs. 1,75,000
Long-term Debt = Debentures = Rs. 75,000
Current Liabilities = Trade Payables + Outstanding Expenses = Rs. 40,000 + Rs. 10,000 = Rs. 50,000
Total Assets = Shareholders' Funds + Long-term Debt + Current Liabilities
= Rs. 1,75,000 + Rs. 75,000 + Rs. 50,000 = Rs. 3,00,000

(a) Debt-Equity Ratio = Long-term Debt ÷ Shareholders' Funds
= Rs. 75,000 ÷ Rs. 1,75,000 = 0.43 : 1

(b) Total Assets to Debt Ratio = Total Assets ÷ Long-term Debt
= Rs. 3,00,000 ÷ Rs. 75,000 = 4 : 1

(c) Proprietary Ratio = Shareholders' Funds ÷ Total Assets
= Rs. 1,75,000 ÷ Rs. 3,00,000 = 0.58 : 1

Q20 Cost of Revenue from Operations is Rs. 1,50,000. Operating expenses are Rs. 60,000. Revenue from Operations is Rs. 2,50,000. Calculate Operating Ratio.

SOLUTION

Operating Cost = Cost of Revenue from Operations + Operating Expenses
= Rs. 1,50,000 + Rs. 60,000 = Rs. 2,10,000
Operating Ratio = (Operating Cost ÷ Revenue from Operations) × 100
= (Rs. 2,10,000 ÷ Rs. 2,50,000) × 100 = 84%

Q21 Calculate the following ratio on the basis of following information:
(i) Gross Profit Ratio (ii) Current Ratio (iii) Acid Test Ratio (iv) Inventory Turnover Ratio (v) Fixed Assets Turnover Ratio

Gross Profit: Rs. 50,000
Revenue from Operations: Rs. 1,00,000
Inventory: Rs. 15,000
Trade Receivables: Rs. 27,500
Cash and Cash Equivalents: Rs. 17,500
Current Liabilities: Rs. 40,000
Land & Building: Rs. 50,000
Plant & Machinery: Rs. 30,000
Furniture: Rs. 20,000

SOLUTION

(i) Gross Profit Ratio = (Gross Profit ÷ Revenue from Operations) × 100
= (Rs. 50,000 ÷ Rs. 1,00,000) × 100 = 50%

(ii) Current Assets = Inventory + Trade Receivables + Cash
= Rs. 15,000 + Rs. 27,500 + Rs. 17,500 = Rs. 60,000
Current Ratio = Current Assets ÷ Current Liabilities = Rs. 60,000 ÷ Rs. 40,000 = 1.5 : 1

(iii) Liquid Assets = Trade Receivables + Cash = Rs. 27,500 + Rs. 17,500 = Rs. 45,000
Acid Test (Liquid) Ratio = Liquid Assets ÷ Current Liabilities
= Rs. 45,000 ÷ Rs. 40,000 = 1.125 : 1

(iv) COGS = Revenue from Operations − Gross Profit = Rs. 1,00,000 − Rs. 50,000 = Rs. 50,000
Inventory Turnover Ratio = COGS ÷ Inventory = Rs. 50,000 ÷ Rs. 15,000 = 3.33 times

(v) Fixed Assets = Land & Building + Plant & Machinery + Furniture
= Rs. 50,000 + Rs. 30,000 + Rs. 20,000 = Rs. 1,00,000
Fixed Assets Turnover Ratio = Revenue from Operations ÷ Fixed Assets
= Rs. 1,00,000 ÷ Rs. 1,00,000 = 1 : 1

Q22 From the following information calculate Gross Profit Ratio, Inventory Turnover Ratio and Trade Receivable Turnover Ratio.

Revenue from Operations: Rs. 3,00,000
Cost of Revenue from Operations: Rs. 2,40,000
Inventory at the end: Rs. 62,000
Gross Profit: Rs. 60,000
Inventory in the beginning: Rs. 58,000
Trade Receivables: Rs. 32,000

SOLUTION

(i) Gross Profit Ratio = (Gross Profit ÷ Revenue from Operations) × 100
= (Rs. 60,000 ÷ Rs. 3,00,000) × 100 = 20%

(ii) Average Inventory = (Opening Inventory + Closing Inventory) ÷ 2
= (Rs. 58,000 + Rs. 62,000) ÷ 2 = Rs. 60,000
Inventory Turnover Ratio = Cost of Revenue from Operations ÷ Average Inventory
= Rs. 2,40,000 ÷ Rs. 60,000 = 4 times

(iii) Trade Receivables Turnover Ratio = Revenue from Operations ÷ Trade Receivables
= Rs. 3,00,000 ÷ Rs. 32,000 = 9.375 times