

CHAPTER - 1
Financial Analysis and Planning – Ratio Analysis
1 DEFINITION OF RATIO

- A ratio is defined as "the indicated quotient of two mathematical expressions and as the relationship between two or more things."
- Here, ratio means financial ratio or accounting ratio which is a mathematical expression of the relationship between two accounting figures.

2. FINANCIAL ANALYSIS

It may be of two types: - Horizontal and vertical.

- **Horizontal Analysis:** When financial statement of one year are analysed and interpreted after comparing with another year or years, it is known as horizontal analysis. It can be based on the ratios derived from the financial information over the same time span.
- **Vertical Analysis:** When financial statement of single year is analyzed then it is called vertical analysis. This analysis is useful in inter firm comparison. Every item of Profit and loss account is expressed as a percentage of gross sales, while every item on a balance sheet is expressed as a percentage of total assets held by the firm.

3. SUMMARY OF RATIOS

Another way of categorizing the ratios is being shown to you in a tabular form. A summary of the ratios has been tabulated as under:

Ratio	Formulae	Interpretation
Liquidity Ratio		
Current Ratio	$\frac{\text{Current Assets}}{\text{Current Liabilities}}$	A simple measure that estimates whether the business can pay short term debts. Ideal ratio is 2.
Quick Ratio	$\frac{\text{Current Assets}}{\text{Current Liabilities}}$	It measures the ability to meet current debt immediately. Ideal ratio is 1.
Cash Ratio	$\frac{(\text{Cash and Bank balances} + \text{Marketable Securities})}{\text{Current Liabilities}}$	It measures absolute liquidity of the business.
Basic Defense Interval Ratio	$\frac{(\text{Cash and Bank balances} + \text{Net Receivables} + \text{Marketable Securities})}{\text{Operating Expenses} \times \frac{360}{\text{No. of Days}}}$	It measures the ability of the business to meet regular cash expenditures.
Net Working Capital	$\frac{\text{Current Assets}}{\text{Current Liabilities}}$	It is a measure of cash flow to determine the ability of business to survive financial crisis.
Capital Structure Ratio		
Equity Ratio	$\frac{\text{Shareholder's Equity}}{\text{Net Assets}}$	It indicates owner's fund in companies to total fund invested.
Debt Ratio	$\frac{\text{Total Debt}}{\text{Net Assets}}$	It is an indicator of use of outside funds.
Debt to equity Ratio	$\frac{\text{Total Debt}}{\text{Shareholder's Equity}}$	It indicates the composition of capital structure in terms of debt and equity.

Debt to Total Assets Ratio	$\frac{\text{Total Debt}}{\text{Shareholder's Equity}}$	It measures how much of total assets is financed by the debt.
Capital Gearing Ratio	$\frac{\text{Preference Share Capital+Debentures+ Other Borrowed Funds}}{\text{Equity Share Capital+Reserves \& Surplus-Losses}}$	It shows the proportion of fixed interest bearing capital to equity shareholders' fund. It also signifies the advantage of financial leverage to the equity shareholder.
Proprietary Ratio	$\frac{\text{Proprietary Fund}}{\text{Total Assets}}$	It measures the proportion of total assets financed by shareholders.

Coverage Ratios

Debt Service Coverage Ratio (DSCR)	$\frac{\text{Earnings available for debt services}}{\text{Interest+Instalments}}$	It measures the ability to meet the commitment of various debt services like interest, instalment etc. Ideal ratio is 2.
Interest Coverage Ratio	$\frac{\text{EBIT}}{\text{Interest}}$	It measures the ability of the business to meet interest obligations. Ideal ratio is > 1.
Preference Dividend Coverage Ratio	$\frac{\text{Net Profit after taxes (EAT)}}{\text{Preference dividend liability}}$	It measures the ability to pay the preference shareholders' dividend. Ideal ratio is > 1.
Fixed Charges Coverage Ratio	$\frac{\text{EBIT+Depreciation}}{\text{Interest+Repayment of loan}}$	This ratio shows how many times the cash flow before interest and taxes covers all fixed financing charges. The ideal ratio is > 1.

Activity Ratio/ Efficiency Ratio/ Performance Ratio/ Turnover Ratio

Total Asset Turnover Ratio	$\frac{\text{Sales of Goods Sold}}{\text{Average Total Assets}}$	A measure of total asset utilisation. It helps to answer the question - What sales are being generated by each rupee's worth of assets invested in the business?
Fixed Assets Turnover Ratio	$\frac{\text{Sales of Goods Sold}}{\text{Fixed Assets}}$	This ratio is about fixed asset capacity. A reducing sales or profit being generated from each rupee invested in fixed assets may indicate overcapacity or poorer- performing equipment.
Capital Turnover Ratio	$\frac{\text{Sales of Goods Sold}}{\text{Net Assets}}$	This indicates the firm's ability to generate sales per rupee of long term investment.
Working Capital Turnover Ratio	$\frac{\text{Sales}}{\text{COGS}} \div \text{Working Capital}$	It measures the efficiency of the firm to use working capital.
Inventory Turnover Ratio	$\frac{\text{COGS}}{\text{Sales}} \div \text{Average Inventory}$	It measures the efficiency of the firm to manage its inventory.
Debtors Turnover Ratio	$\frac{\text{Credit Sales}}{\text{Average Accounts Receivables}}$	It measures the efficiency at which firm is managing its receivables.
Receivables (Debtors') Velocity	$\frac{\text{Average Accounts Receivables}}{\text{Average Daily Credit Sales}}$	It measures the velocity of collection of receivables.
Payables Turnover Ratio	$\frac{\text{Annual Net Credit Purchases}}{\text{Average Accounts Payables}}$	It measures how fast a company makes payment to its creditors.

Payables Velocity	$\frac{\text{Average Accounts Payables}}{\text{Average Daily Credit Purchases}}$	It measures the velocity of payment of payables.
Profitability Ratios based on Sales		
Gross Profit Ratio	$\frac{\text{Gross Profit}}{\text{Sales}} \times 100$	This ratio tells us something about the business's ability consistently to control its production costs or to manage the margins it makes on products it buys and sells.
Net Profit Ratio	$\frac{\text{Net Profit}}{\text{Sales}} \times 100$	It measures the relationship between net profit and sales of the business.
Operating Profit Ratio	$\frac{\text{Operating Profit}}{\text{Sales}} \times 100$	It measures operating performance of business.
Expenses Ratio		
Cost of Goods Sold (COGS) Ratio	$\frac{\text{COGS}}{\text{Sales}} \times 100$	It measures portion of a particular expenses in comparison to sales.
Operating Expenses Ratio	$\frac{(\text{Administrative Exp.} + \text{Selling \& Distribution Overhead})}{\text{Sales}}$	
Operating Ratio	$\frac{\text{COGS} + \text{Operating Expenses}}{\text{Sales}} \times 100$	
Financial Expenses Ratio	$\frac{\text{Financial Expenses}}{\text{Sales}} \times 100$	
Profitability Ratios related to Overall Return on Assets/ Investments		
Return on Investment (ROI)	$\frac{\frac{\text{Return Profit}}{\text{Earnings}}}{\text{Investments}} \times 100$	It measures overall return of the business on investment/ equity funds/capital employed/ assets.
Return on Assets (ROA)	$\frac{\text{Net Profit after taxes}}{\text{Average total assets}}$	It measures net profit per rupee of average total assets/average tangible assets/average fixed assets.
Return on Capital Employed ROCE (Pre-tax)	$\frac{\text{EBIT}}{\text{Capital Employed}} \times 100$	It measures overall earnings (either pre-tax or post tax) on total capital employed.
Return on Capital Employed ROCE (Post-tax)	$\frac{\text{EBIT (1-t)}}{\text{Capital Employed}} \times 100$	It indicates earnings available to equity shareholders in comparison to equity shareholders' net worth.
Return on Equity (ROE)	$\frac{(\text{Net Profit after taxes} - \text{Preference dividend (if any)})}{\text{Net Worth Equity shareholders fund}} \times 100$	
Profitability Ratios Required for Analysis from Owner's Point of View		
Earnings per Share (EPS)	$\frac{\text{Net profit available to equity shareholders}}{\text{Number of equity shares outstanding}}$	EPS measures the overall profit generated for each share in existence over a particular period.

Dividend per Share (DPS)	$\frac{\text{Dividend paid to equity shareholders}}{\text{Number of equity shares outstanding}}$	Proportion of profit distributed per equity share.
Dividend payout Ratio (DP)	$\frac{\text{Dividend per equity share}}{\text{Earning per share (EPS)}}$	It shows % of EPS paid as dividend and retained earnings.
Profitability Ratios related to market/ valuation/ Investors		
Price-Earnings per Share (P/E Ratio)	$\frac{\text{Market Price per Share (MPS)}}{\text{Earnings per share (EPS)}}$	At any time, the P/E ratio is an indication of how highly the market "rates" or "values" a business. A P/E ratio is best viewed in the context of a sector or market average to get a feel for relative value and stock market pricing.
Dividend Yield	$\frac{\text{Dividend} + \text{Change in share price}}{\text{Initial share price}} \times 100$ OR $\frac{\text{Dividend per share (DPS)}}{\text{market price per share (MPS)}} \times 100$	It measures dividend paid based on market price of shares.
Earnings Yield	$\frac{\text{Earnings per share (EPS)}}{\text{Market Price per share (MPS)}} \times 100$	It is the relationship of earning per share and market value of shares.
Market Value /Book Value per Share	$\frac{\text{Market value per share}}{\text{Book value per share}}$	It indicates market response of the shareholders' investment.
Q Ratio	$\frac{\text{Market value of equity \& liabilities}}{\text{Estimates replacement cost of assets}}$	It measures market value of equity as well as debt in comparison to all assets at their replacement cost.

Students may note that now a company is also required to disclose the following ratios in the notes to accounts while preparing Financial Statements:

- Current Ratio,
- Debt-Equity Ratio,
- Debt Service Coverage Ratio,
- Return on Equity Ratio,
- Inventory turnover ratio,
- Trade Receivables turnover ratio,
- Trade payables turnover ratio,
- Net capital turnover ratio,
- Net profit ratio,
- Return on Capital employed,
- Return on investment.

PROBLEM : 1

Following is the abridged Balance Sheet of Alpha Ltd.:

Liabilities	₹	Assets	₹	₹
Share Capital	1,00,000	Land and Buildings		80,000
Profit and Loss Account	17,000	Plant and Machineries	50,000	
Current Liabilities	40,000	Less: Depreciation	15,000	35,000
				1,15,000
		Stock	21,000	

		Receivables	20,000	
		Bank	1,000	42,000
Total	1,57,000	Total		1,57,000

With the help of the additional information furnished below, you are required to PREPARE Trading and Profit & Loss Account and Balance Sheet as at 31st March, 2021:

- i. The company went in for re-organisation of capital structure, with share capital remaining the same as follows:

Share capital	50%
Other Shareholders' funds	15%
5% Debentures	10%
Current Liabilities	25%

Debentures were issued on 1st April, interest being paid annually on 31st March.

- ii. Land and Buildings remained unchanged. Additional plant and machinery has been bought and a further ₹5,000 depreciation was written off.
 (The total fixed assets then constituted 60% of total fixed and current assets.)
- iii. Working capital ratio was 8 : 5.
- iv. Quick assets ratio was 1 : 1.
- v. The receivables (four-fifth of the quick assets) to sales ratio revealed a credit period of 2 months. There were no cash sales.
- vi. Return on net worth was 10%.
- vii. Gross profit was at the rate of 15% of selling price.
- viii. Stock turnover was eight times for the year.

Ignore Taxation.

(Study Material)

SOLUTION : 1

Particulars	%	(₹)
Share capital (given to be same)	50%	1,00,000
Other shareholders funds	15%	30,000
5% Debentures	10%	20,000
Current Liabilities	25%	50,000
Total (1,00,000 / 50%)	100%	2,00,000

Calculation of Assets

Total liabilities	=	Total Assets
₹2,00,000	=	Total Assets
Fixed Assets	=	60% of total fixed assets and current assets
Current Assets	=	Total Assets - Fixed Assets
	=	₹ 2,00,000 - ₹ 1,20,000 = ₹ 80,000

Calculation of additions to Plant & Machinery

	₹
Total fixed assets	1,20,000
Less: Land & Buildings	80,000
Plant and Machinery (after providing depreciation)	40,000
Less: Existing Plant & Machinery (after extra depreciation of ₹ 5,000) i.e. 50,000 - 20,000	30,000
Addition to the Plant & Machinery	10,000

Calculation of stock

Quick ratio	=	Current assets - stock = 1 Current liabilities
	=	₹ 80,000 - stock / ₹ 50,000 = 1
Stock	=	₹ 80,000 - ₹ 50,000
	=	₹ 30,000
Receivables	=	4/5th of quick assets
	=	(₹ 80,000 - ₹ 30,000) × 4/5
	=	₹ 40,000
Receivables turnover	=	Receivables × Credit Sales × 12 Months = 2 Months
	=	40,000 × 12 / Credit Sales = 2 Months
2x credit sales	=	4,80,000
Credit sales	=	4,80,000 / 2
	=	₹ 2,40,000 = Total Sales (As there were no cash sales)
Gross profit	=	15% of sales = ₹ 2,40,000 × 15/100 = ₹ 36,000

Return on net worth (net profit)

Net worth	=	₹ 1,00,000 + ₹ 30,000	=	₹ 1,30,000
Net profit	=	₹ 1,30,000 × 10/100	=	₹ 13,000
Debenture interest	=	₹ 20,000 × 5/100	=	₹ 1,000

Projected profit and loss account for the year ended 31st March, 2021

Particulars	₹	Particulars	₹
To cost of goods sold	2,04,000	By sales	2,40,000
To gross profit	36,000		
	2,40,000		2,40,000
To debenture interest	1,000	By gross profit	36,000
To administration and other expenses (bal. fig.)	22,000		
To net profit	13,000		
	36,000		36,000

Projected Balance Sheet as at 31st March, 2021

Liabilities	₹	Assets	₹	₹
Share capital	1,00,000	Fixed assets:		
Profit and loss A/c	30,000	Land & buildings		80,000
(17,000+13,000)		Plant & machinery	60,000	
5% Debentures	20,000	Less: Depreciation	20,000	40,000
Current liabilities	50,000	Current assets		
		Stock	30,000	
		Receivables	40,000	
		Bank	10,000	80,000
	2,00,000			2,00,000

PROBLEM : 2

The capital structure of Beta Limited is as follows:

Equity share capital of ₹ 10 each	8,00,000
9% preference share capital of ₹ 10 each	3,00,000
	11,00,000

Additional information: Profit (after tax at 35 per cent) ₹ 2,70,000; Depreciation ₹ 60,000; Equity dividend

paid 20 per cent; Market price of equity shares ₹ 40.

You are required to COMPUTE the following, showing the necessary workings:

- Dividend yield on the equity shares
- Cover for the preference and equity dividends
- Earnings per shares
- Price-earnings ratio

(Study Material)

SOLUTION : 2

2. (a) Dividend yield on the equity shares

$$= \frac{\text{Dividend per share}}{\text{Market price per share}} \times 100 = \frac{\text{₹ 2 (i.e. } 0.20 \times \text{₹ 10)}}{\text{₹ 40}} \times 100 = 5\%$$

- (b) Dividend coverage ratio

$$\begin{aligned} \text{(i) Preference} &= \frac{\text{Profit after taxes}}{\text{Dividend payable to preference shareholders}} \\ &= \frac{\text{₹ 2,70,000}}{\text{₹ 27,000 (i.e. } 0.09 \times \text{₹ 3,00,000)}} = 10 \text{ times} \end{aligned}$$

$$\begin{aligned} \text{(ii) Equity} &= \frac{\text{Profit after taxes - Preference share dividend}}{\text{Dividend payable to equity shareholders at current rate of ₹ 2 per share}} \\ &= \frac{\text{₹ 2,70,000 - ₹ 27,000}}{\text{₹ 1,60,000 (i.e. } 80,000 \text{ shares} \times \text{₹ 2)}} = 1.52 \text{ times} \end{aligned}$$

$$\begin{aligned} \text{(c) Earnings per equity share} &= \frac{\text{Earnings available to equity shareholders}}{\text{Number of equity shares outstanding}} \\ &= \frac{\text{₹ 2,43,000}}{80,000} = \text{₹ 3.04 per share} \end{aligned}$$

$$\text{(d) Price-earning (P/E) ratio} = \frac{\text{Market price per share}}{\text{Earnings per share}} = \frac{\text{₹ 40}}{\text{₹ 3.04}} = 13.2 \text{ times}$$

PROBLEM : 3

Following information relates to Temer Ltd.:

Debtors Velocity	3 months
Creditors Velocity	2 months
Stock Turnover Ratio	1.5
Gross Profit Ratio	25%
Bills Receivables	₹ 25,000
Bills Payables	₹ 10,000
Gross Profit	₹ 4,00,000
Fixed Assets turnover Ratio	4

Closing stock of the period is ₹ 10,000 above the opening stock.

DETERMINE:

- Sales and cost of goods sold
- Sundry Debtors
- Sundry Creditors
- Closing Stock
- Fixed Assets

(Oct. 2018 – MTP – 5 Marks)

SOLUTION : 3

9. (i) Determination of Sales and Cost of goods sold:

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

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

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

$$\begin{aligned} \text{Cost of Goods Sold} &= \text{Sales} - \text{Gross Profit} \\ &= ₹ 16,00,000 - ₹ 4,00,000 = ₹ 12,00,000 \end{aligned}$$

(ii) Determination of Sundry Debtors:

Debtors' velocity is 3 months or Debtors' collection period is 3 months,

$$\text{So, Debtors' turnover ratio} = \frac{12\text{months}}{3\text{months}} = 4$$

$$\begin{aligned} \text{Debtors' turnover ratio} &= \frac{\text{Credit Sales}}{\text{Average Accounts Receivable}} \\ &= \frac{₹ 16,00,000}{\text{Bills Receivable} + \text{Sundry Debtors}} = 4 \end{aligned}$$

$$\text{Or, Sundry Debtors} + \text{Bills receivable} = ₹ 4,00,000$$

$$\text{Sundry Debtors} = ₹ 4,00,000 - ₹ 25,000 = ₹ 3,75,000$$

(iii) Determination of Sundry Creditors:

Creditors' velocity of 2 months or credit payment period is 2 months.

$$\text{So, Creditors' turnover ratio} = \frac{12 \text{ months}}{2 \text{ months}} = 6$$

$$\begin{aligned} \text{Creditors turnover ratio} &= \frac{\text{Credit Purchases}^*}{\text{Average Accounts Payables}} \\ &= \frac{₹ 12,10,000}{\text{Sundry Creditors} + \text{Bills Payables}} = 6 \end{aligned}$$

$$\text{So, Sundry Creditors} + \text{Bills Payable} = ₹ 2,01,667$$

$$\text{Or, Sundry Creditors} + ₹ 10,000 = ₹ 2,01,667$$

$$\text{Or, Sundry Creditors} = ₹ 2,01,667 - ₹ 10,000 = ₹ 1,91,667$$

(iv) Determination of Closing Stock

$$\text{Stock Turnover Ratio} = \frac{\text{Cost of Goods Sold}}{\text{Average Stock}} = \frac{₹ 12,00,000}{\text{Average Stock}} = 1.5$$

$$\text{So, Average Stock} = ₹ 8,00,000$$

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

$$\text{Or } \frac{\text{Opening Stock} + (\text{Opening Stock} + ₹ 10,000)}{2} = ₹ 8,00,000$$

$$\text{Or, Opening Stock} = ₹ 7,95,000$$

$$\text{So, Closing Stock} = ₹ 7,95,000 + ₹ 10,000 = ₹ 8,05,000$$

(v) Determination of Fixed Assets

$$\text{Fixed Assets Turnover Ratio} = \frac{\text{Cost of Goods Sold}}{\text{Fixed Assets}} = 4$$

$$\text{Or, } \frac{\text{₹12,00,000}}{\text{Fixed Assets}} = 4$$

$$\text{Or, Fixed Asset} = \text{₹ 3,00,000}$$

Workings:
***Calculation of Credit purchases:**

Cost of goods sold = Opening stock + Purchases - Closing stock

$$\text{₹ 12,00,000} = \text{₹ 7,95,000} + \text{Purchases} - \text{₹ 8,05,000}$$

$$\text{₹ 12,00,000} + \text{₹ 10,000} = \text{Purchases}$$

$$\text{₹ ₹ 12,10,000} = \text{Purchases (credit)}$$

Assumption:

- (i) All sales are credit sales
- (ii) All purchases are credit purchase
- (iii) Stock Turnover Ratio and Fixed Asset Turnover Ratio may be calculated either on Sales or on Cost of Goods Sold.

QUESTION : 4

The following is the Profit and loss account and Balance sheet of KLM LLP.

Trading and Profit & Loss Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To Whom It May Concern: Opening stock	12,46,000	By Sales	1,96,56,000
To Purchases	1,56,20,000	By Closing stock	14,28,000
To Gross profit c/d	42,18,000		
	2,10,84,000		2,10,84,000
		By Gross profit b/d	42,18,000
To Administrative expenses	18,40,000	By Interest on investment	24,600
To Selling & distribution expenses	7,56,000	By Dividend received	22,000
To Interest on loan	2,60,000		
To Net profit	14,08,600		
	42,64,600		42,64,600

Balance Sheet as on.....

Capital & Liabilities	Amount (₹)	Assets	Amount (₹)
Capital	20,00,000	Plant & machinery	24,00,000
Retained earnings	42,00,000	Building	42,00,000
General reserve	12,00,000	Furniture	12,00,000
Term loan from bank	26,00,000	Sundry receivables	13,50,000
Sundry Payables	7,20,000	Inventory	14,28,000
Other liabilities	2,80,000	Cash & Bank balance	4,22,000
	1,10,00,000		1,10,00,000

You are required to COMPUTE:

- | | | |
|-----------------------------|--------------------------------|---------------------------------|
| (i) Gross profit ratio | (ii) Net profit ratio | (iii) Operating cost ratio |
| (iv) Operating profit ratio | (v) Inventory turnover ratio | (vi) Current ratio |
| (vii) Quick ratio | (viii) Interest coverage ratio | (ix) Return on capital employed |
- (x) Debt to assets ratio.

(Nov. 2019 - RTP)

SOLUTION : 4

$$(i) \quad \text{Gross profit ratio} = \frac{\text{Gross profit}}{\text{Sales}} \times 100 = \frac{\text{₹ } 42,18,000}{\text{₹ } 1,96,56,000} \times 100 = 21.46\%$$

$$(ii) \quad \text{Net profit ratio} = \frac{\text{Net profit}}{\text{Sales}} \times 100 = \frac{\text{₹ } 14,08,600}{\text{₹ } 1,96,56,000} \times 100 = 7.17\%$$

$$(iii) \quad \text{Operating ratio} = \frac{\text{Operating cost}}{\text{Sales}} \times 100$$

Operating cost = Cost of goods sold + Operating expenses

Cost of goods sold = Sales - Gross profit

$$= 1,96,56,000 - 42,18,000 = 1,54,38,000$$

Operating expenses = Administrative expenses + Selling & distribution expenses

$$= 18,40,000 + 7,56,000 = 25,96,000$$

$$\text{Therefore, Operating ratio} = \frac{1,54,38,000 + 25,96,000}{1,96,56,000} \times 100$$

$$= \frac{1,80,34,000}{1,96,56,000} \times 100 = 91.75\%$$

$$(iv) \quad \text{Operating profit ratio} = 100 - \text{Operating cost ratio} \\ = 100 - 91.75\% = 8.25\%$$

$$(v) \quad \text{Inventory turnover ratio} = \frac{\text{Cost of goods sold}}{\text{Average stock}} \\ = \frac{1,54,38,000}{\frac{14,28,000 + 12,46,000}{2}} = 11.55 \text{ times}$$

$$(vi) \quad \text{Current ratio} = \frac{\text{Current assets}}{\text{Current liabilities}}$$

Current assets = Sundry receivables + Inventory + Cash & Bank balance
 = 13,50,000 + 14,28,000 + 4,22,000 = 32,00,000

Current liabilities = Sundry Payables + Other liabilities
 = 7,20,000 + 2,80,000 = 10,00,000

$$\text{Current ratio} = \frac{32,00,000}{10,00,000} = 3.2 \text{ times}$$

$$(vii) \quad \text{Quick ratio} = \frac{\text{Current assets} - \text{Inventories}}{\text{Current liabilities}} \\ = \frac{32,00,000 - 14,28,000}{10,00,000} = 1.77 \text{ Times}$$

$$(viii) \quad \text{Interest coverage ratio} = \frac{\text{EBIDT}}{\text{Interest}} = \frac{\text{Net profit} + \text{Interest}}{\text{Interest}} \\ = \frac{14,08,600 + 2,60,000}{2,60,000} = 6.42 \text{ times}$$

$$(ix) \quad \text{Return on capital employed (ROCE)} = \frac{\text{EBIT}}{\text{Capital employed}} = 100$$

$$\begin{aligned} \text{Capital employed} &= \text{Capital} + \text{Retained earnings} + \text{General reserve} + \text{Term loan} \\ &= 20,00,000 + 42,00,000 + 12,00,000 + 26,00,000 \\ &= 1,00,00,000 \end{aligned}$$

$$\text{Therefore, ROCE} = \frac{16,68,600}{1,00,00,000} \times 100 = 16.69\%$$

$$(ix) \text{ Debt to assets ratio} = \frac{\text{Debts}}{\text{Total assets}} \times 100 = \frac{26,00,000}{1,10,00,000} \times 100 = 23.64\%$$

QUESTION : 5

FM Ltd. is in a competitive market where every company offers credit. To maintain the competition, FM Ltd. sold all its goods on credit and simultaneously received the goods on credit. The company provides the following information relating to current financial year:

Debtors Velocity	3 months
Creditors Velocity	2 months
Stock Turnover Ratio (on Cost of Goods Sold)	1.5
Fixed Assets turnover Ratio (on Cost of Goods Sold)	4
Gross Profit Ratio	25%
Bills Receivables	₹ 75,000
Bills Payables	₹ 30,000
Gross Profit	₹ 12,00,000

FM Ltd. has the tendency of maintaining extra stock of ₹ 30,000 at the end of the period than that at the beginning.

DETERMINE:

- (i) Sales and cost of goods sold
- (ii) Sundry Debtors
- (iii) Closing Stock
- (iv) Sundry Creditors
- (v) Fixed Assets

(May 2022 - RTP)

SOLUTION : 5

- (i) Determination of Sales and Cost of goods sold:

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

$$\text{Or, } \frac{25}{100} = \frac{12,00,000}{\text{Sales}}$$

$$\text{Or, Sales} = \frac{12,00,000}{25} = ₹ 48,00,000$$

$$\begin{aligned} \text{Cost of Goods Sold} &= \text{Sales} - \text{Gross Profit} \\ &= ₹ 48,00,000 - ₹ 12,00,000 = ₹ 36,00,000 \end{aligned}$$

- (ii) Determination of Sundry Debtors:

Debtors' velocity is 3 months or Debtors' collection period is 3 months,

$$\text{So, Debtors' turnover ratio} = \frac{12 \text{ months}}{3 \text{ months}} = 4$$

$$\text{Debtors' turnover ratio} = \frac{\text{Credit Sales}}{\text{Average Accounts Receivable}}$$

$$= \frac{₹ 48,00,000}{\text{Bills Receivable} + \text{Sundry Debtors}}$$

Or, Sundry Creditors + Bills Payables

$$= ₹ 12,00,000$$

Sundry Debtors

$$= ₹ 12,00,000 - ₹ 75,000 = ₹ 11,25,000$$

(iii) Determination of Closing Stock

$$\text{Stock Turnover Ratio} = \frac{\text{Cost of Goods Sold}}{\text{Average Stock}} = \frac{₹ 36,00,000}{\text{Average Stock}} = 1.5$$

So, Average Stock = ₹ 24,00,000

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

$$\text{Or } \frac{\text{Opening Stock} + (\text{Opening Stock} + ₹ 30,000)}{2} = ₹ 24,00,000$$

Or 2 Opening Stock + ₹ 30,000 = ₹ 48,00,000

Or 2 Opening Stock = ₹ 47,70,000

Or, Opening Stock = ₹ 23,85,000

So, Closing Stock = ₹ 23,85,000 + ₹ 30,000 = ₹ 24,15,000

(iv) Determination of Sundry Creditors:

Creditors' velocity of 2 months or credit payment period is 2 months.

$$\text{So, Creditors' turnover ratio} = \frac{12 \text{ months}}{2 \text{ months}} = 6$$

$$\text{Creditors turnover ratio} = \frac{\text{Credit Purchases}^*}{\text{Average Accounts Payables}}$$

$$\text{So, Creditors' turnover ratio} = \frac{₹ 36,30,000}{\text{Sundry Creditors} + \text{Bills Payable}} = 6$$

So, Sundry Creditors + Bills Payable = ₹ 6,05,000

Or, Sundry Creditors + ₹ 30,000 = ₹ 6,05,000

Or, Sundry Creditors = ₹ 5,75,000

(v) Determination of Fixed Assets

$$\text{Fixed Assets Turnover Ratio} = \frac{\text{Cost of goods sold}}{\text{Fixed Assets}} = 4$$

$$\text{Or } \frac{₹ 36,00,000}{\text{Fixed Assets}} = 4$$

Or, Fixed Asset = ₹ 9,00,000

Workings :

₹ Calculation of Credit purchases:

Cost of goods sold = Opening stock + Purchases - Closing stock

$$₹ 36,00,000 = ₹ 23,85,000 + \text{Purchases} - ₹ 24,15,000$$

Purchases (credit) = ₹ 36,30,000

Calculation of credit purchase also can be done as below:

Or Credit Purchases = Cost of goods sold + Difference in Opening Stock

$$\text{Or Credit Purchases} = ₹ 36,00,000 + ₹ 30,000 = ₹ 36,30,000$$

QUESTION : 6

Following figures and ratios are related to a company Q Ltd. :

(i)	Sales for the year (all credit)	₹ 30,00,000
(ii)	Gross Profit ratio	25 per cent
(iii)	Fixed assets turnover (based on cost of goods sold)	1.5
(iv)	Stock turnover (based on cost of goods sold)	6
(v)	Liquid ratio	1: 1
(vi)	Current ratio	1.5: 1
(vii)	Receivables (Debtors) collection period	2 months
(viii)	Reserves and surplus to share capital	0.6 : 1
(ix)	Capital gearing ratio	0.5
(x)	Fixed assets to net worth	1.20 : 1

You are required to calculate :

Closing stock, Fixed Assets, Current Assets, Debtors and Net worth.

(May 2019 Exam - 5 Marks)

SOLUTION : 6

(i) Calculation of Closing Stock:

$$\begin{aligned} \text{Cost of Goods Sold} &= \text{Sales} - \text{Gross Profit (25\% of Sales)} \\ &= ₹ 30,00,000 - ₹ 7,50,000 \\ &= ₹ 22,50,000 \end{aligned}$$

$$\begin{aligned} \text{Closing Stock} &= \text{Cost of Goods Sold} / \text{Stock Turnover} \\ &= ₹ 22,50,000 / 6 = ₹ 3,75,000 \end{aligned}$$

(ii) Calculation of Fixed Assets:

$$\begin{aligned} \text{Fixed Assets} &= \text{Cost of Goods Sold} / \text{Fixed Assets Turnover} \\ &= ₹ 22,50,000 / 1.5 \\ &= ₹ 15,00,000 \end{aligned}$$

(iii) Calculation of Current Assets:

$$\begin{aligned} \text{Current Ratio} &= 1.5 \text{ and Liquid Ratio} = 1 \\ \text{Stock} &= 1.5 - 1 = 0.5 \\ \text{Current Assets} &= \text{Amount of Stock} \times 1.5 / 0.5 \\ &= ₹ 3,75,000 \times 1.5 / 0.5 = ₹ 11,25,000 \end{aligned}$$

(iv) Calculation of Debtors:

$$\begin{aligned} \text{Debtors} &= \text{Sales} \times \text{Debtors Collection period} / 12 \\ &= ₹ 30,00,000 \times 2 / 12 \\ &= ₹ 5,00,000 \end{aligned}$$

(v) Calculation of Net Worth:

$$\begin{aligned} \text{Net worth} &= \text{Fixed Assets} / 1.2 \\ &= ₹ 15,00,000 / 1.2 \\ &= ₹ 12,50,000 \end{aligned}$$
