

+2 Accountancy

Solution Book

9. Ratio Analysis

TEXTBOOK SELF-EXAMINATION QUESTIONS SOLVED

I. Choose the correct answer.

1. The mathematical expression that provides a measure of the relationship between two figures is called

(a) Conclusion (b) Ratio (c) Model (d) Decision

Ans. (b) Ratio

2. Current ratio indicates

(a) Ability to meet short term obligations (b) Efficiency of management
(c) Profitability (d) Long term solvency

Ans. (a) Ability to meet short term obligations

3. Current assets excluding inventory and prepaid expenses is called

(a) Reserves (b) Tangible assets (c) Funds (d) Quick assets

Ans. (d) Quick assets

4. Debt equity ratio is a measure of

(a) Short term solvency (b) Long term solvency
(c) Profitability (d) Efficiency

Ans. (b) Long term solvency

5. Match List I with List II and select the correct answer using the codes given below:

List I

List II

(i) Current ratio

1. Liquidity

(ii) Net profit ratio

2. Efficiency

(iii) Debt-equity ratio

3. Long term solvency

(iv) Inventory turnover ratio

4. Profitability

Codes:

	(i)	(ii)	(iii)	(iv)
(a)	1	4	3	2
(b)	3	2	4	1
(c)	4	3	2	1
(d)	1	2	3	4

Ans. (a) 1 4 3 2

6. To test the liquidity of a concern, which of the following ratios are useful?

- (i) Quick ratio
- (ii) Net profit ratio
- (iii) Debt-equity ratio
- (iv) Current ratio

Select the correct answer using the codes given below:

- (a) (i) and (ii) (b) (i) and (iv) (c) (ii) and (iii) (d) (ii) and (iv)

Ans. (b) (i) and (iv)

7. Proportion of share holder's funds to total assets is called

- (a) Proprietary ratio
- (b) Capital gearing ratio
- (c) Debt equity ratio
- (d) Current ratio

Ans. (a) Proprietary ratio

8. Which one of the following is not correctly matched?

- (a) Liquid ratio – Proportion
- (b) Gross profit ratio – Percentage
- (c) Fixed assets turnover ratio – Percentage
- (d) Debt-equity ratio – Proportion

Ans. (c) Fixed assets turnover ratio – Percentage

9. Current liabilities ₹ 40,000; Current assets ₹ 1,00,000; Inventory ₹ 20,000. Quick ratio is

- (a) 1:1 (b) 2.5:1 (c) 2:1 (d) 1:2

Ans. (c) 2:1

10. Cost of revenue from operations ₹ 3,00,000; Inventory in the beginning of the year ₹ 60,000; Inventory at the close of the year ₹ 40,000. Inventory turnover ratio is

- (a) 2 times (b) 3 times (c) 6 times (d) 8 times

Ans. (c) 6 times

II. Very short answer questions:

1. What is meant by accounting ratios?

Ans. Ratio is a mathematical expression of relationship between two related or interdependent items. It is the numerical or quantitative relationship between two items. It is calculated by dividing one item by the other related item. When ratios are calculated on the basis of accounting information, these are called 'accounting ratios'.

2. What is quick ratio?

Ans. Quick ratio gives the proportion of quick assets to current liabilities. It indicates whether the business concern is in a position to pay its current liabilities as and when they become due, out of its quick assets. Quick assets are current assets excluding inventories and prepaid expenses. It is otherwise called “liquid ratio” or “acid test ratio”.

$$\text{Quick ratio} = \frac{\text{Quick assets}}{\text{Current liabilities}}$$

Quick assets = Current assets – Inventories – Prepaid expenses.

Higher the quick ratio, better is the short-term financial position of an enterprise.

3. What is meant by debt equity ratio?

Ans. It is calculated to assess the long term solvency position of a business concern. Debt equity ratio expresses the relationship between long term debt and shareholder's funds.

$$\text{Debt equity ratio} = \frac{\text{Long term debt}}{\text{Shareholders funds}}$$

Long term debt = debentures, bonds, long term loans and other long term borrowing.

Shareholder's funds = Equity share capital + Preference share capital + Reserves and surplus

4. What does return on investment ratio indicate?

Ans. It shows the proportion of net profit before interest and tax to capital employed (shareholder's fund and long term debts). It is an overall measure of profitability of a business concern.

$$\text{Return on investment [RoI]} = \frac{\text{Net profit before interest and tax}}{\text{Capital employed}} \times 100$$

Capital employed = Shareholder's funds + Non current liabilities

Greater the return on investment better is the profitability of a business and vice versa.

5. State any two limitations of ratio analysis.

Ans. Ratios are only means: Ratios are not end in themselves but they are only means to achieve a particular purpose. Analysis of related items must be done by the management or experts with the help of ratios.

Change in price level: Ratio analysis may not reflect price level changes and current values as they are calculated based on historical data given in financial statement.

III. Short answer questions:**1. Explain the objectives of ratio analysis.**

The objectives of ratio analysis:

- (i) To simplify accounting figures
- (ii) To facilitate analysis of financial statements
- (iii) To analysis the operational efficiency of a business
- (iv) To help in budgeting and forecasting
- (v) To facilitate intra firm and inter firm comparison of performance

2. What is inventory conversion period? How is it calculated?

It is the time taken to sell the inventory. A shorter inventory conversion period indicates more efficiency in the management of inventory. It is computed as follows:

$$\text{Inventory conversion period (in days)} = \frac{\text{Number of days in a year}}{\text{Inventory turnover ratio}}$$

$$\text{Inventory conversion period (in months)} = \frac{\text{Number of months in a year}}{\text{Inventory turnover ratio}}$$

3. How is operating profit ascertained?

It gives the proportion of operating profit to revenue from operations. Operating profit ratio is an indicator of operational efficiency of an organisation. It may be computed as follows:

$$\text{Operating profit ratio} = \frac{\text{Operating profit}}{\text{Revenue from operations}} \times 100$$

Alternatively, it is calculated as under:

$$\text{Operating profit ratio} = 100 - \text{Operating cost ratio}$$

$$\text{Operating profit} = \text{Revenue from operations} - \text{Operating cost}$$

4. State any three advantages of ratio analysis.

(i) Measuring operational efficiency: Ratio analysis helps to know operational efficiency of a business by finding the relationship between operating cost and revenues and also by comparison of present ratios with those of the past ratios.

(ii) Intra firm comparison: Comparison of efficiency of different divisions of an organisation is possible by comparing the relevant ratios.

(iii) Inter firm comparison: Ratio analysis helps the firm to compare its performance with other firms.

5. Bring out the limitations of ratio analysis.

Following are the limitations of ratio analysis:

(i) Ratios are only means: Ratios are not end in themselves but they are only means to achieve a particular purpose. Analysis of related items must be done by the management or experts with the help of ratios.

(ii) Accuracy of financial information: The accuracy of a ratio depends on the accuracy of information taken from financial statements. If the statements are inaccurate, ratios computed based on that will also be inaccurate.

(iii) Consistency in preparation of financial statements: Inter firm comparisons with the help of ratio analysis will be meaningful only if the firms follow uniform accounting procedures consistently.

(iv) Non-availability of standards or norms: Ratios will be meaningful only if they are compared with accepted standards or norms. Only few financial ratios have universally recognised standards. For other ratios, comparison with standards is not possible.

(v) Change in price level: Ratio analysis may not reflect price level changes and current values as they are calculated based on historical data given in financial statements.

IV Exercises:

1. Calculate the current ratio from the following information.

Particulars	₹	Particulars	₹
Current investments	40,000	Fixed assets	5,00,000
Inventories	2,00,000	Trade creditors	80,000
Trade debtors	1,20,000	Bills payable	50,000
Bills receivable	80,000	Expenses payable	20,000
Cash and cash equivalents	10,000	Non-current liability	3,00,000

Sol.

$$\text{Current ratio} = \frac{\text{Current assets}}{\text{Current liabilities}}$$

Current assets = current investment + Inventories + Trade debtors + Bills receivable + Cash and cash equivalents

$$\begin{aligned} \text{C.A} &= 40,000 + 2,00,000 + 1,20,000 + 80,000 + 10,000 \\ &= 4,50,000 \end{aligned}$$

Current liabilities = Trade creditors + Bills payable + Expenses payable

$$\begin{aligned} \text{C.L} &= 80,000 + 50,000 + 20,000 \\ &= 1,50,000 \end{aligned}$$

$$\text{Current ratio} = \frac{4,50,000}{1,50,000}$$

$$\text{Current ratio} = 3 : 1$$

2. Calculate quick ratio: Total current liabilities ₹ 2,40,000; Total current assets ₹ 4,50,000; Inventories ₹ 70,000; Prepaid expenses ₹ 20,000

Sol.

$$\text{Quick ratio} = \frac{\text{Current assets}}{\text{Current liabilities}}$$

Quick ratio = Current assets – Inventory – Prepaid expenses

$$= 4,50,000 - 70,000 - 20,000$$

$$= 3,60,000$$

$$\text{Quick ratio} = \frac{3,60,000}{2,40,000} = 1.5 : 1$$

3. Following is the balance sheet of Lakshmi Ltd. as on 31st March, 2019:

Particulars	₹
I EQUITY AND LIABILITIES	
1. Shareholders' funds	
Equity share capital	4,00,000
2. Non-current liabilities	2,00,000
Long term borrowings	

3. Current liabilities	
(a) Short-term borrowings	50,000
(b) Trade payables	3,10,000
(c) Other current liabilities	
Expenses payable	15,000
(d) Short-term provisions	25,000
Total	10,00,000
II ASSETS	
1. Non-current assets	
(a) Fixed assets	4,00,000
Tangible assets	
2. Current assets	
(a) Inventories	1,60,000
(b) Trade debtors	3,20,000
(c) Cash and cash equivalents	80,000
(d) Other current assets	
Prepaid expenses	40,000
Total	10,00,000

Calculate: (i) Current ratio (ii) Quick ratio

Sol.

$$\begin{aligned}
 \text{(i) Current ratio} &= \frac{\text{Current assets}}{\text{Current liabilities}} \\
 &= \frac{6,00,000}{4,00,000}
 \end{aligned}$$

$$\text{Current ratio} = 1.5:1$$

Current assets = Inventories + Trade debtors + cash and cash equivalents + other current assets prepaid expenses.

$$\begin{aligned}
 &= 40,000 + 1,60,000 + 3,20,000 + 80,000 \\
 &= 6,00,000
 \end{aligned}$$

Current Liabilities = short-term loans + trade payables + Expenses payable + short term provision.

$$= 50,000 + 3,10,000 + 15,000 + 25,000 = 4,00,000$$

$$\text{Quick ratio} = \frac{\text{Quick assets}}{\text{Current liabilities}}$$

Quick assets = Current assets – Inventory – Prepaid expenses

$$= 6,00,000 - 1,60,000 - 40,000 = 4,00,000$$

$$\text{Quick ratio} = \frac{4,00,000}{4,00,000} = 1 : 1$$

4. From the following information calculate debt equity ratio.

Balance Sheet (Extract) as on 31st March, 2019

Particulars	Amount (₹)
I. EQUITY AND LIABILITIES	
1. Shareholders' funds	
(a) Share capital	
Equity share capital	6,00,000
(b) Reserves and surplus	2,00,000
2. Non-current liabilities	
Long-term borrowings (Debentures)	6,00,000
3. Current liabilities	
(a) Trade payables	1,60,000
(b) Other current liabilities	
Outstanding expenses	40,000
Total	16,00,000

Sol.

$$\text{Debt equity ratio} = \frac{\text{Long term debt}}{\text{Shareholders funds}}$$

$$\text{Debentures} = 6,00,000$$

$$\text{Shareholder's funds} = \text{equity share capital} + \text{Reserves and surplus}$$

$$= 6,00,000 + 2,00,000$$

$$= 8,00,000$$

$$\text{Debt Equity ratio} = \frac{6,00,000}{8,00,000} = 0.75 : 1$$

5. From the following Balance Sheet of Sundaram Ltd. calculate proprietary ratio:

Balance sheet of Sundaram Ltd. as on 31.3.2019

Particulars	Amount (₹)
I EQUITY AND LIABILITIES	
1. Shareholders' funds	
(a) Share capital	
(i) Equity share capital	2,50,000
(ii) Preference share capital	1,50,000

(b) Reserves and surplus	50,000
2. Non-current liabilities	
Long-term borrowings	-
3. Current liabilities	
Trade payables	1,50,000
Total	6,00,000
II ASSETS	
1. Non-current assets	
(a) Fixed assets	4,60,000
(b) Non-current investments	1,00,000
2. Current assets	
Cash and Cash equivalents	40,000
Total	6,00,000

Sol.

$$\text{Proprietary Ratio} = \frac{\text{Shareholders' funds}}{\text{Total tangible assets}}$$

$$\begin{aligned} \text{Shareholder's funds} &= \text{Equity share capital} + \text{Preference share capital} + \text{Reserves and surplus} \\ &= 2,50,000 + 1,50,000 + 50,000 \\ &= 4,50,000 \end{aligned}$$

$$\begin{aligned} \text{Total tangible assets} &= \text{Fixed assets} + \text{Non-current investment} + \text{cash and cash equivalents} \\ &= 4,60,000 + 1,00,000 + 40,000 \\ &= 6,00,000 \end{aligned}$$

$$\text{Proprietary Ratio} = \frac{4,50,000}{6,00,000} = 0.75 : 1$$

6. From the following information calculate capital gearing ratio:

Balance Sheet (Extract) as on 31.03.2018

Particulars	Amount (₹)
I EQUITY AND LIABILITIES	
1. Shareholders' funds	
(a) Share capital	
Equity share capital	4,00,000
5% Preference share capital	1,00,000
(b) Reserves and surplus	
General reserve	2,50,000
Surplus	1,50,000

2. Non-current liabilities	
Long-term borrowings (6% Debentures)	3,00,000
3. Current liabilities	
Trade payables	1,20,000
Provision for tax	30,000
Total	13,50,000

$$\text{Sol. Capital gearing Ratio} = \frac{\text{Funds bearing fixed interest or fixed dividend}}{\text{Equity shareholders funds}} = \frac{4,00,000}{8,00,000}$$

Capital gearing ratio: 0.5:1

Funds bearing fixed interest or divided Preference share capital + debentures

$$= 1,00,000 + 3,00,000 = 4,00,000$$

Equity shareholder's funds = Equity share capital + Reserves and surplus

$$= 4,00,000 + 2,50,000 + 1,50,000 = 8,00,000$$

7. From the following Balance Sheet of James Ltd. as on 31.03.2019 calculate

(i) Debt-equity ratio (ii) Proprietary ratio (iii) Capital gearing ratio

Balance Sheet of James Ltd. as on 31.03.2019

Particulars	Amount (₹)
I EQUITY AND LIABILITIES	
1. Shareholders' funds	
(a) Share capital	
Equity share capital	2,50,000
6% Preference share capital	2,00,000
(b) Reserves and surplus	1,50,000
2. Non-current liabilities	
Long-term borrowings (8% Debentures)	3,00,000
3. Current liabilities	
Short-term borrowings from banks	2,00,000
Trade payables	1,00,000
Total	12,00,000
II ASSETS	
1. Non-current assets	
Fixed assets	8,00,000
2. Current assets	
(a) Inventories	1,20,000
(b) Trade receivables	2,65,000

(c) Cash and cash equivalents	10,000
(d) Other current assets	
Expenses paid in advance	5,000
Total	12,00,000

Sol.

$$(i) \text{ Debt Equity Ratio} = \frac{\text{Long term debt}}{\text{Shareholders funds}}$$

Long term debts = Debentures = 3,00,000

Shareholder's funds = Equity share capital + Preference share capital + Reserves and surplus
 = 2,50,000 + 2,00,000 + 1,50,000
 = 6,00,000

$$\text{Debt Equity Ratio} = \frac{3,00,000}{6,00,000} = 0.5 : 1$$

Debt-equity ratio: 0.5:1

$$(ii) \text{ Proprietary Ratio} = \frac{\text{Shareholders' funds}}{\text{Total tangible assets}}$$

Total Tangible assets = 12,00,000

$$\text{Proprietary ratio} = \frac{6,00,000}{12,00,000} = 0.5 : 1$$

$$(iii) \text{ Capital gearing Ratio} = \frac{\text{Funds bearing fixed interest or fixed dividend}}{\text{Equity shareholders funds}}$$

Funds bearing fixed interest or dividend = Preference share capital + Debentures + Long term borrowings.

$$= 2,00,000 + 3,00,000 = 5,00,000$$

Equity shareholder's funds = Equity share capital + Reserves and surplus
 = 2,50,000 + 1,50,000 = 4,00,000

$$\text{Capital gearing ratio} = \frac{5,00,000}{4,00,000} = 1.25 : 1$$

8. From the given information calculate the inventory turnover ratio and inventory conversion period (in months) of Devi Ltd.

Particulars	₹
Revenue from operations	12,00,000
Inventory at the beginning of the year	1,70,000
Inventory at the end of the year	1,30,000
Purchases made during the year	6,90,000
Carriage inwards	20,000

$$\text{Sol. Inventory Turnover Ratio} = \frac{\text{Cost of revenue from operations}}{\text{Average inventory}}$$

Cost of Revenues from operation = opening inventory + Net purchases + carriage inwards – closing inventory

$$= 1,70,000 + 6,90,000 + 20,000 - 1,30,000$$

$$= 7,50,000$$

$$\text{Average inventory} = \frac{\text{Opening inventory} + \text{Closing inventory}}{2} = \frac{1,70,000 + 1,30,000}{2}$$

$$= 1,50,000$$

$$\text{Inventory Turnover ratio} = \frac{7,50,000}{1,50,000} = 5 \text{ times}$$

$$\text{Inventory conversion period} = \frac{\text{Number of months in a year}}{\text{Inventory turnover period}} = \frac{12}{5} = 2.4 \text{ months}$$

9. The credit revenue from operations of Velavan Ltd, amounted to ₹ 10,00,000. Its debtors and bills receivables at the end of the accounting period amounted to ₹ 1,10,000 and ₹ 1,40,000 respectively. Calculate trade receivables turnover ratio and also collection period in months.

$$\text{Sol. Trade receivable turnover ratio} = \frac{\text{Credit revenue from operations}}{\text{Average trade receivables}}$$

Average Trade Receivable = Debtors + Bills receivable

$$\text{Average Trade Receivable} = \frac{1,10,000 + 1,40,000}{2} = 2,50,000$$

$$\text{Trade receivable turnover ratio} = \frac{10,00,000}{2,50,000} = 4 \text{ times}$$

$$\text{Debt collection period} = \frac{\text{Number of months in a year}}{\text{Trade receivables turnover ratio}} = \frac{12}{4} = 3 \text{ months.}$$

10. From the following figures obtained from Arjun Ltd, calculate the trade payables turnover ratio and credit payment period (in days).

Particulars	₹
Credit purchases during 2018 – 2019	9,50,000
Trade creditors as on 1.4.2018	60,000
Trade creditors as on 31.3.2019	50,000
Bills payable as on 1.4.2018	45,000
Bills payable as on 31.3.2019	35,000

$$\text{Sol. Trade payable turnover ratio} = \frac{\text{Credit purchases}}{\text{Average trade payable}}$$

$$\text{Average trade payable} = \frac{(\text{Opening} + \text{Closing}) (\text{Creditors} + \text{Bills payable})}{2}$$

$$= \frac{60,000 + 50,000 + 45,000 + 35,000}{2} = 95,000$$

$$\text{Trade payable turnover ratio} = \frac{9,50,000}{95,000} = 10 \text{ times}$$

$$\text{Credit payment period} = \frac{\text{No. of days in a year}}{\text{Trade payable turnover ratio}} = \frac{365}{10} = 36.5 \text{ days}$$

11. From the following information of Geetha Ltd., calculate fixed assets turnover ratio

(i) Revenue from operations during the year were ₹ 55,00,000.

(ii) Fixed assets at the end of the year ₹ 5,00,000.

Sol. Fixed assets turnover ratio = $\frac{\text{Revenue from operations}}{\text{Average fixed assets}} = \frac{55,00,000}{5,00,000} = 11 \text{ times}$

12. Calculate (i) Inventory turnover ratio (ii) Trade receivables turnover ratio (iii) Trade payables turnover ratio and (iv) Fixed assets turnover ratio from the following information obtained from Aruna Ltd.

Particulars	As on 31st March, 2018 ₹	As on 31st March, 2019 ₹
Inventory	3,60,000	4,40,000
Trade receivables	7,40,000	6,60,000
Trade payables	1,90,000	2,30,000
Fixed assets	6,00,000	8,00,000

Additional information:

(i) Revenue from operations for the year ₹ 35,00,000

(ii) Purchases for the year ₹ 21,00,000

(iii) Cost of revenue from operations ₹ 16,00,000.

Assume that sales and purchases are for credit.

Sol. (i) Inventory turnover ratio = $\frac{\text{Cost of revenue from operation}}{\text{Average inventory}}$

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

$$= \frac{3,60,000 + 4,40,000}{2} = 4,00,000$$

$$\text{Inventory turnover ratio} = \frac{16,00,000}{4,00,000} = 4 \text{ times}$$

(ii) Trade receivable turnover ratio = $\frac{\text{Revenue from operation}}{\text{Average trade receivable}}$

$$\text{Average trade receivable} = \frac{7,40,000 + 6,60,000}{2} = 7,00,000$$

$$\text{Trade receivable turnover ratio} = \frac{35,00,000}{7,00,000} = 5 \text{ times}$$

$$(iii) \text{ Trade payable turnover ratio} = \frac{\text{Credit purchases}}{\text{Average payable}}$$

$$\text{Average trade payable} = \frac{1,90,000 + 2,30,000}{2} = 21,00,000$$

$$\text{Trade payable turnover ratio} = \frac{21,00,000}{2,10,000} = 10 \text{ times}$$

$$(iv) \text{ Fixed assets turnover ratio} = \frac{\text{Revenue from operation}}{\text{Average fixed assets}}$$

$$\text{Average fixed assets} = \frac{6,00,000 + 8,00,000}{2} = 7,00,000$$

$$\text{Fixed assets turnover ratio} = \frac{35,00,000}{7,00,000} = 5 \text{ times}$$

13. Calculate gross profit ratio from the following:

Revenue from operations ₹ 2,50,000, Cost of revenue from operations ₹ 2,10,000 and Purchases ₹ 1,80,000.

$$\text{Sol. Gross Profit Ratio} = \frac{\text{Gross profit}}{\text{Revenue from operations}} \times 100$$

Gross profit = Revenue from operations – cost of revenue from operation

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

$$= 40,000$$

$$\text{Gross profit ratio} = \frac{40,000}{2,50,000} \times 100 = 16\%$$

14. Following is the statement of profit and loss of Padma Ltd. for the year ended 31st March, 2018. Calculate the operating cost ratio.

Statement of Profit and Loss

Particulars	Note No.	Amount ₹
I. Revenue from operations		15,00,000
II. Other Income		40,000
III. Total revenue (I + II)		15,40,000
IV. Expenses:		
Purchases of Stock-in-trade		8,60,000
Changes in inventories		40,000
Employee benefits expense (Salaries)		1,60,000

Other expenses	1	1,70,000
Total expenses		12,30,000
V. Profit before tax (III–IV)		3,10,000

Notes to Accounts

Particulars	Amount ₹
1. Other expenses	
Office and administrative expenses	50,000
Selling and distribution expenses	90,000
Loss on sale of furniture	30,000
	1,70,000

Sol.

$$\text{Operating cost ratio} = \frac{\text{Operating cost}}{\text{Revenue from operations}} \times 100$$

$$\begin{aligned} \text{Cost of revenue from operation} &= \text{Purchases of stock-in-trade} + \text{change in inventories of stock} \\ &= 8,60,000 + 40,000 = 9,00,000 \end{aligned}$$

$$\begin{aligned} \text{Operating expenses} &= \text{office and administrative expenses} + \text{selling and distribution expenses} + \text{salaries} \\ &= 50,000 + 90,000 + 1,60,000 = 3,00,000 \end{aligned}$$

$$\begin{aligned} \text{Operating cost} &= \text{cost of revenue from operating} + \text{operating expenses} \\ &= 9,00,000 + 3,00,000 \\ &= 12,00,000 \end{aligned}$$

$$\text{Operating cost ratio} = \frac{12,00,000}{15,00,000} \times 100 = 80\%$$

15. Calculate operating profit ratio under the following cases.

Case 1: Revenue from operations ₹ 8,00,000, Operating profit ₹ 2,00,000.

Case 2: Revenue from operations ₹ 20,00,000, Operating cost ₹ 14,00,000.

Case 3: Revenue from operations ₹ 10,00,000, Gross profit 25% on revenue from operations, Operating expenses ₹ 1,00,000

Sol.

$$\text{Operating ratio} = \frac{\text{Operating profit}}{\text{Revenue from operation}} \times 100$$

Case I:

$$\text{Operating ratio} = \frac{2,00,000}{8,00,000} \times 100 = 25\%$$

Case II:

$$\text{Operating profit} = \text{Revenue from operation} - \text{operating cost}$$

$$= 20,00,000 - 14,00,000 = 6,00,000$$

$$\text{Operating ratio} = \frac{6,00,000}{20,00,000} \times 100 = 30\%$$

Case III:

$$\text{Operating profit} = \text{Gross profit} - \text{operating expenses}$$

$$\text{Gross profit} = 10,00,000 \times \frac{25}{100} = 2,50,000$$

$$\text{Operating profit} = 2,50,000 - 1,00,000 = 1,50,000$$

$$\text{Operating ratio} = \frac{1,50,000}{10,00,000} \times 100 = 15\%$$

16. From the following details of a business concern calculate net profit ratio.

Particulars	₹
Revenue from operations	9,60,000
Cost of revenue from operations	5,50,000
Office and administration expenses	1,45,000
Selling and distribution expenses	25,000

$$\text{Sol. Net profit Ratio} = \frac{\text{Net profit after tax}}{\text{Revenue from operation}} \times 100$$

Net profit = Revenue from operation – cost of revenue from operation – office and administrative expenses – selling and distribution expenses

$$= 9,60,000 - 5,50,000 - 1,45,000 - 25,000 = 2,40,000$$

$$\text{Net profit Ratio} = \frac{2,40,000}{9,60,000} \times 100 = 25\%$$

17. From the following statement of profit and loss of Dericston Ltd. calculate

(i) Gross profit ratio (ii) Net profit ratio.

Statement of Profit and Loss

Particulars	₹
I. Revenue from operations	24,00,000
II. Other income:	
Income from investment	70,000
III. Total revenues (I+II)	24,70,000
IV. Expenses:	
Purchase of stock-in-trade	18,80,000
Changes in inventories	-80,000

Employee benefits expense	2,90,000
Other expenses	1,10,000
Provision for tax	30,000
Total expenses	22,30,000
V. Profit for the year	2,40,000

Sol. Gross profit ratio = $\frac{\text{Gross profit}}{\text{Revenue from operation}} \times 100$

Gross profit = Revenue from operation – purchase of stock in trade – changes in inventories
 = 24,00,000 – 18,80,000 – (-80,000)
 = 6,00,000

Gross profit ratio = $\frac{6,00,000}{24,00,000} \times 100 = 25\%$

(ii) Net profit ratio = $\frac{\text{Net profit}}{\text{Revenue from operations}} \times 100$

Net profit ratio = $\frac{2,40,000}{24,00,000} \times 100 = 10\%$

18. From the following trading activities of Jones Ltd. calculate

(i) Gross profit ratio (ii) Net profit ratio (iii) Operating cost ratio (iv) Operating profit ratio

Statement of Profit and loss

Particulars	₹
I. Revenue from operations	4,00,000
II. Other income:	
Income from investments	4,000
III. Total revenues (I+II)	4,04,000
IV Expenses:	
Purchases of stock-in-trade	2,10,000
Changes in inventories	30,000
Finance costs	24,000
Other expenses (Administration and selling)	60,000
Total expenses	3,24,000
V Profit before tax (III – IV)	80,000

Sol. (i) Gross profit ratio = $\frac{\text{Gross profit}}{\text{Revenue from operation}} \times 100$

Gross profit = Revenue from operation – purchases of stock in trade – changes in inventories
 = 40,00,00 – 21,00,00 – 30,000 = 16,00,00

$$\text{Gross profit ratio} = \frac{1,60,000}{4,00,000} \times 100 = 40\%$$

$$\begin{aligned} \text{(ii) Net profit ratio} &= \frac{\text{Net profit}}{\text{Revenue from operation}} \times 100 \\ &= \frac{80,000}{4,00,000} \times 100 = 20\% \end{aligned}$$

$$\text{(iii) Operating cost ratio} = \frac{\text{Operating cost}}{\text{Revenue from operation}} \times 100$$

$$\begin{aligned} \text{Cost of revenue} &= \text{Purchases of stock in trade} + \text{change in inventories of stock} \\ &= 2,10,000 + 30,000 = 2,40,000 \end{aligned}$$

$$\text{Operating expenses} = \text{Administration expenses} + \text{selling expenses} = 60,000$$

$$\text{Operating cost} = 2,40,000 + 60,000 = 3,00,000$$

$$\text{Operating cost ratio} = \frac{3,00,000}{4,00,000} \times 100 = 75\%$$

$$\text{(iv) Operating profit ratio} = \frac{\text{Operating profit}}{\text{Revenue from operation}} \times 100$$

$$\begin{aligned} \text{Operating profit} &= \text{Gross profit} - \text{operating expenses} \\ &= 1,60,000 - 60,000 = 1,00,000 \end{aligned}$$

$$\text{Operating profit ratio} = \frac{1,00,000}{4,00,000} \times 100 = 25\%$$

19. Following is the extract of balance sheet of Abdul Ltd., as on 31st March, 2019:

Particulars	₹
EQUITY AND LIABILITIES	
1. Shareholders' funds	
(a) Share capital	2,00,000
(b) Reserves and surplus	50,000
2. Non-current liabilities	
Long-term borrowings	1,50,000
3. Current liabilities	
(a) Trade payables	1,30,000
(b) Other current liabilities	5,000
(c) Short-term provisions	20,000
Total	5,55,000

Net profit before interest and tax for the year was ₹ 60,000. Calculate the return on capital employed for the year.

$$\text{Sol. Return on Capital employed} = \frac{\text{Net profit before interest and tax}}{\text{Capital employed}} \times 100$$

$$\begin{aligned} \text{Capital employed} &= \text{Share capital} + \text{Reserve and surplus} + \text{Long term loans} \\ &= 2,00,000 + 50,000 + 1,50,000 = 4,00,000 \end{aligned}$$