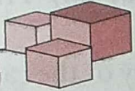# 3 ACCOUNTING RATIOS

BASIC CONCEPTS

❖ **Ratio:** Ratio is a mathematical relationship between two related items or group of items expressed in quantitative forms.

❖ **Accounting Ratios:** Accounting ratios are those that are based on financial statements and express an arithmetical relation between various accounting variables.

❖ **Ratio Analysis:** According to Myres, "Ratio analysis of financial statements is a study of relationship among various financial factors in a business as disclosed by a single set of statements and a study of trends of these factors as shown in a series of statements".

❖ **Objectives of Ratio Analysis:**

1. **Identify Problem Areas:** Ratio analysis helps in locating those areas of business which are weak, not functioning properly and require immediate attention.

2. **Measure Profitability:** Through an analysis of gross profit, net profit, expenses and other similar relative amounts, the ratio analysis helps in arriving at true figures of profitability and also highlights changes in it from time to time.

3. **Ascertain Operational Efficiency:** Ratio analysis determines operational efficiency through operating/activity ratios and also point out the areas where it may be improved and how.

4. **Assess Business Solvency:** By highlighting relationships between assets and liabilities through solvency ratios, ratio analysis indicates the financial condition.

5. **Gauge Financial Position:** Liquidity and solvency ratios together help in measuring short-term and long-term financial position of a concern. If the position is not satisfactory, corrective measures may instantly be initiated.

6. **Facilitate Comparative Analysis:** A comparison between present and past performance and that between self and other firms of the same industry, constitutes the comparative analysis. This is especially useful to find out advantages and disadvantages of the firm itself.

7. **Aid in Budgeting and Forecasting:** Ratio analysis assumes much importance in financial forecasting and planning. These ratios provide meaningful conclusions that work as a guide for future decisions.

8. **Simplify Accounting Figures:** A major objective of financial analysis is to shorten, summarise, organise and properly arrange the financial matter so that it may easily be absorbed by all.

❖ **Classification of Accounting Ratios:** On the basis of purpose, ratios may be classified as:

1. **Liquidity Ratios:** Liquidity means ability of the firm to pay its current liabilities in time. These ratios are used to assess the short-term financial position of the firm. Therefore, these ratios are

also called as Short-term Solvency Ratios. Liquidity ratio include two ratios: (*i*) Current Ratio and (*ii*) Quick Ratio.

2. **Solvency Ratios:** These ratios are calculated to ascertain the ability of the firm to pay its long-term liabilities in time. Sound solvency ratios ensure long-term financial stability of the business. Some important solvency ratios are:

   (*i*) Debt to Equity Ratio, (*ii*) Total Assets to Debt Ratio and (*iii*) Proprietary Ratio (*iv*) Interest Coverage Ratio.

3. **Turnover Ratios:** These ratios are also known as Performance Ratios or Activity Ratios. These ratios indicate how efficiently and profitably the total capital, working capital, fixed assets and inventory of the business are used. Varieties of turnover ratios include:

   (*i*) Inventory Turnover Ratio, (*ii*) Trade Receivables Turnover Ratio, (*iii*) Trade Payables Turnover Ratio, (*iv*) Working Capital Turnover Ratio.

4. **Profitability Ratios:** Such ratios measure various aspects of the profitability or the capacity to earn a stable return of a business firm. Some important profitability ratios are:

   (*i*) Gross Profit Ratio, (*ii*) Operating Ratio, (*iii*) Operating Profit Ratio (*iv*) Net Profit Ratio, (*v*) Return on Investment.

❖ **Analysis of Different Ratios–At a Glance**

Ratio	Formula	Contents	Standard	Importance
I. Liquidity Ratios				
1. Current Ratio	$\dfrac{\text{Current Assets}}{\text{Current Liabilities}}$	*Current Assets* = Current Investments + Inventories (Excluding Spare Parts and Loose Tools) + Trade Receivables + Cash and Cash Equivalents + Short-term Loans and Advances + Other Current Assets. *Current Liabilities* = Short-term Borrowings + Trade Payables + Other Current Liabilities + Short-term Provisions.	2:1	High current ratio shows the ability of the firm to pay short-term liabilities. Low ratio shows poor liquid condition of firm.
2. Quick Ratio or Liquid Ratio or Acid-test Ratio	$\dfrac{\text{Liquid Assets}}{\text{Current Liabilities}}$	*Liquid Assets* = Current Assets – (Inventories + Prepaid Expenses.)	1:1	High Quick Ratio shows that firm has ability to meet liquid obligations in time.
II. Solvency Ratios				
1. Debt-Equity Ratio	$\dfrac{\text{Debt}}{\text{Equity / Shareholders' Funds}}$	*Debt* = Long-term Borrowings + Long-term Provisions. *Equity/Shareholders' Funds* = Share Capital + Reserves and Surplus Or Non-current Assets (Tangible Assets + Intangible Assets + Non-current Trade Investments + Long-term Loans and Advances) + Working Capital – Non-Current Liabilities (Long-term Borrowings + Long-term Provisions). Where, *Working Capital* = Current Assets – Current Liabilities	Ratio of 2:1 is considered satisfactory. Generally a low ratio is considered favourable.	This ratio indicates the proportionate claims of owners and outsiders on firm's assets. High ratio shows claims of outsiders are greater but low ratio shows outsiders' claims are less.
2. Total Assets to Debt Ratio	$\dfrac{\text{Total Assets}}{\text{Debts}}$	*Total Assets* = Non-current Assets + Current Assets *Debts* = Long-term Borrowings + Long-term Provisions	Lower the ratio lower is the role of borrowed funds	This ratio attempts to measure the proportion of total assets funded by long-term debts.

3. Proprietary Ratio	$$\frac{\text{Proprietors' Funds}}{\text{Total Assets}}$$	Proprietors' Funds = Share Capital + Reserves and Surplus Or Non-current Assets (Tangible Assets + Intangible Assets + Non-current Trade Investments + Long-term Loans and Advances) + Working Capital – Non-current Liabilities (Long-term Borrowings + Long-term Provisions).	Higher the ratio, better the solvency, lower the ratio lesser solvency of the firm.	This ratio indicates the extent to which the assets of company can be lost without affecting interest of creditors.
4. Interest Coverage Ratio or Debt Service Ratio	$$\frac{\text{Net Profit before Interest and Tax}}{\text{Interest on Long-term Debts}}$$	Net Profit before interest on long-term debts.	Higher the ratio more safer the long-term lenders, lower the ratio more risk for long-term lenders.	It indicates the number of times interest is covered by the available profit.

III. Activity Ratios

1. Inventory Turnover Ratio	$$\frac{\text{Cost of Revenue from operations}}{\text{Average Inventory}}$$	Cost of Revenue from operations = Cost of Material consumed + Purchase of stock in trade + change in inventories of finished goods, WIP and Stock-in-trade + Diect Expenses Or = Opening Inventory + Net Purchases + Direct Expenses – Closing inventory Or Revenue from operations – Gross Profit Average Inventory $$= \frac{\text{Opening Inventory} + \text{Closing Inventory}}{2}$$	There is no rule of thumb for interpreting this ratio. But higher the ratio, better it is.	It measures the velocity of conversion of stock into sales. High ratio indicates efficient management and low ratio shows inefficient management.

Note: In the absence of opening inventory, closing inventory is average.

2. Trade Receivables Turnover Ratio	$$\frac{\text{Net Credit Revenue from operations}}{\text{Average Trade Receivable}}$$	Net Credit Revenue from operations = Total Revenue from operations, i.e., Sales – Cash Revenue from operations i.e., Cash Sales. Average Trade Receivable $$= \frac{\text{Opening Receivables} + \text{Closing Receivable}}{2}$$ Trade Receivables = Debtors + Bills Receivable	No rule of thumb but higher ratio shows efficient management.	It indicates the number of times the debtors are turned over during a year.

Note: In case opening Trade receivables not given in the question then closing will be taken as average.

3. Average Collection Period	$$\frac{365 / 52 / 12}{\text{Trade Receivables Turnover Ratio}}$$	Debtors' or Trade Receivables Turnover Ratio	No rule of thumb or set standard but shorter average collection period is better for firm.	This shows the average number of days for converting debtors into cash. Low average collection period is favourable.
4. Trade Payables Turnover Ratio	$$\frac{\text{Net Credit Purchases}}{\text{Average Trade Payable}}$$	Net Credit Purchases = Total Purchases – Cash Purchases Average Trade Payables = $$\frac{\text{Opening Payables} + \text{Closing Payables}}{2}$$ Trade Payables = Creditors + Bills payable	Higher ratio is better for firm.	This ratio indicates the velocity with which the creditors are turned over in relation to purchase.

Note: In case of opening Trade payables not given in the question then closing Trade Payable will be taken as average.

5. Average Payment Period	$\dfrac{365 / 52 / 12}{\text{Trade Payables or Creditors Turnover Ratio}}$	Trade Payables or Creditors Turnover Ratio	Lower the ratio better the efficiency and higher ratio shows poor efficiency.	This ratio shows the average no. of days taken by a firm to pay the creditors. Lower the ratio better the liquidity of the firm.
6. Working Capital Turnover Ratio	$\dfrac{\text{Net Revenue from Operations}}{\text{Working Capital}}$	*Working capital.* = Current Assets – Current Liabilities. *Current Assets.* = Current Investments + Inventories (Excluding Spare parts and loose tools) + Trade Receivables + Cash and Cash equivalents + Short-term Loans and Advances + Other Current Assets. *Current Liabilities* = Short-term Borrowings + Trade Payables + Other Current Liabilities + Short-term Provisions.	Higher ratio indicates efficient utilisation of working capital, low ratio shows inefficient management.	This ratio indicates the velocity of the utilisation of net working capital. It indicates the no. of times working capital is turned over in the course of business in one year.

IV. Profitability Ratios

1. Gross Profit Ratio	$\dfrac{\text{Gross Profit}}{\text{Net Revenue from Operations (Net Sales)}} \times 100$	*Gross Profit* = Revenue from Operations – Cost of Revenue from operations Cost of Revenue from operations = Material Consumed + Purchase of Stock in trade + change in inventories of Finished goods, WIP, SIT + Direct Expenses Or Opening Inventory + Net Purchases + Direct Expenses – Closing Inventory Or Revenue from operations – Gross profit	Higher the ratio, good for the business, lower ratio not good for the business.	It reflects the efficiency with which a firm produces its products. It should be higher to cover all expenses and to pay dividends and interest.
2. Net Profit Ratio	$\dfrac{\text{Net Profit before/after Tax}}{\text{Net Revenue from Operations (Net Sales)}} \times 100$	*Net Profit (Before Tax)* = Gross Profit + Other Incomes – Indirect Expenses. *Net Profit (After Tax)* = Revenue from operations – Cost of Revenue from operations – Operating Expenses – Non-operating Expenses + Non-operating Income – Tax	Higher the ratio better, the profitability of the firm.	This ratio indicates the efficiency of management in manufacturing, administration, selling and other activities of the firm. It is the overall measurement of firm's profitability.
3. Operating Ratio	$\dfrac{\text{Cost of Revenue from Operations + Operating Expensess}}{\text{Net Revenue from Operation (Net Sales)}} \times 100$	*Operating expenses* = Office, Administration, selling and Distribution expenses, Employees Benefit Expenses, Depreciation and Amortisation	Lower the ratio better it is.	It is yardstick for operating efficiency. Higher ratio is less favourable.

4. Operating Profit Ratio	$\dfrac{\text{Operating Profit}}{\text{Net Revenue from Operations}} \times 100$	*Operating Profit* = Net Profit (before Tax) + Non-operating Expenses/ Losses – Non-operating Incomes Or Gross Profit + Operating Income – Operating Expenses. *Non-operating Expenses* = Interest on Long-term Borrowing + Loss on sale of Fixed or Non-current Assets. *Non-operating Income* = Interest received on investments + Profit on sale of Fixed Assets or Non-current Assets + Rent received	Higher the ratio, better the results.	This ratio measures the overall efficiency of the business.
5. Return on Investment (ROI)	$\dfrac{\text{Net Profit before Interest, Tax and Dividend}}{\text{Capital Employed}} \times 100$	**Capital Employed:** **1. Liabilities Side Approach:** Shareholders' Fund (Share Capital + Reserves and Surpluses) + Non-current Liabilities (Long-term borrowing + Long-term Provisions). Or Debt + Equity **2. Assets Side Approach:** Non-current Assets (Tangible Assets + Intangible Assets + Non-current Investment + Long-term Loans and Advances) + Working Capital. Or Total Assets – Current Liabilities	Higher the ratio better the results.	This ratio is the most important ratio to measure the overall profitability of firm. It indicates the extent to which the main object of business is achieved.

Q. 4. (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. **[CBSE (AI) 2004]**

(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.

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

As $\quad$ Current Ratio $= \dfrac{\text{Current Assets}}{\text{Current Liabilities}}$

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

$$2x - x = 4,00,000 - 3,00,000; \quad x = 1,00,000$$

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

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

$\quad$ (i) Calculation of Current Liabilities:

$\qquad$ Current Liabilities = Total Debts or Liabilities – Long-term Debts or Liabilities

$$= ₹3,90,000 - ₹3,00,000 = ₹90,000$$

$\quad$ (ii) Calculation of Current Assets:

$\qquad$ Working Capital = Current Assets – Current Liabilities

$$1,80,000 = \text{Current Assets} - ₹90,000; \quad \text{Current Assets} = ₹2,70,000$$

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

Q. 5. Assuming that the Debt-equity ratio is 2. State giving reasons whether this ratio would increase, decrease or remain unchanged in the following cases:

(a) Purchase of fixed asset on a credit of 2 months.

(b) Purchase of fixed asset on a long term deferred payment basis.

(c) Issue of new shares for cash.

(d) Issue of bonus shares.

(e) Sale of fixed asset at a loss of ₹3,000. **[CBSE Delhi; (AI) 2010; (F) 2010]**

Ans.

Effect	Reasons
(a) No Change	Neither the equity nor the debts are affected.
(b) Increase	Debts are increasing.
(c) Decrease	Shareholders' funds or equity will increase.
(d) No change	Both remain unaffected.
(e) Increase	Because equity will be decreased.

Q. 6. 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

Ans. Debt to Equity Ratio $= \dfrac{\text{Debt}}{\text{Equity}}$

Debt $=$ Long-term Borrowings $+$ Long-term Provisions

$\qquad = 2,00,000 + 1,00,000$

$\qquad = ₹3,00,000$

Equity $=$ Current Assets $+$ Non-current Assets $-$ Current Liabilities $-$ Long-term Borrowings
$\qquad\quad -$ Long-term Provisions

$\qquad = 90,000 + 3,60,000 - 50,000 - 2,00,000 - 1,00,000$

$\qquad = ₹1,00,000$

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

Q. 7. 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%

Current Liabilities ₹40,000

Quick Ratio 0.75 : 1

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

$\qquad\qquad\qquad\qquad\qquad\quad = \dfrac{(\text{Revenue from Operations} - \text{Gross Profit})}{\text{Average Inventory}}$

4 (Given) $\qquad\qquad\qquad\qquad = \dfrac{(₹3,00,000 - 25\% \text{ of } ₹3,00,000)}{4}$

Average Inventory $\qquad\qquad = \dfrac{₹2,25,000}{4} = ₹56,250$

Average Inventory

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

$\qquad\qquad\qquad\qquad\qquad\quad = ₹56,250 + ₹10,000 = ₹66,250$

$\qquad\qquad\qquad\qquad\qquad\quad = \text{Liquid Assets} + \text{Closing Inventory}$

Current Assets

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

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

$\qquad\qquad\qquad\qquad\qquad\quad = \dfrac{\text{Liquid Assets}}{₹40,000}$

0.75 (Given)

or Liquid Assets $\qquad\qquad = ₹40,000 \times 0.75 = ₹30,000$

Current Assets $\qquad\qquad\quad = \text{Liquid Assets} + \text{Inventory}$

$\qquad\qquad\qquad\qquad\qquad\quad = ₹30,000 + ₹66,250 = ₹96,250$

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

Q. 8. A business has a current ratio of 3 : 1 and a quick ratio of 1. 2 : 1. If the working capital is ₹1,80,000, calculate the total current assets and value of Inventory.

Ans. Current Ratio = 3:1

Working Capital = Current Assets − Current Liabilities

Let Current Liabilities be x

Current Assets = $3x$

Working Capital = CA − CL

$= 3x - x = 2x$

$2x = 1,80,000$

$x = 90,000$

Current Liabilities = ₹90,000

Current Assets = $3x$

$= 3 \times 90,000$

$= ₹2,70,000.$

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

$$\frac{1.2}{1} = \frac{\text{Liquid Assets}}{90,000}$$

Liquid Assets = $90,000 \times 1.2$

$= 1,08,000$

Inventory = Current Assets − Liquid Assets

$= 2,70,000 - 1,08,000 = ₹1,62,000.$

Q. 9. From the following information, compute 'Proprietary 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

[CBSE (AI) 2014]

Ans. $\text{Proprietary Ratio} = \dfrac{\text{Shareholders' Funds}}{\text{Total Assets}}$

Shareholders' Funds

= Current Assets + Non-current Assets − Long-term borrowings − Long-term provisions
− Current Liabilities

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

Total Assets = Current Assets + Non-current Assets

$= 90,000 + 3,60,000 = ₹4,50,000$

$\text{Proprietary Ratio} = \dfrac{₹1,00,000}{₹4,50,000} = 0.22 : 1 \text{ or } 22\%.$

Q. 10. From the following information, compute 'Total Assets to Debt Ratio':

Particulars	(₹)
Long-term Borrowings	3,00,000
Long-term Provisions	1,50,000
Current Liabilities	75,000

Non-current Assets
Current Assets   5,40,000
                                                        1,35,000

Ans. Total Assets to Debt ratio $= \dfrac{\text{Total Assets}}{\text{Long-term Debts}}$

Total Assets = Non-current Assets + Current Assets

$= 5,40,000 + 1,35,000$

$= ₹6,75,000$

Long-term Debts = Long-term Borrowings + Long-term Provisions

$= 3,00,000 + 1,50,000$

$= ₹4,50,000$

Total Assets to Debt ratio $= \dfrac{6,75,000}{4,50,000} = 1.5 : 1$

Q. 11. 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%.

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

Equity = Equity Share Capital + General Reserve + Statement of Profit and Loss

$= ₹50,000 + ₹5,000 + ₹15,000$

$= ₹70,000$

(b) Working Capital Turnover Ratio

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

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

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 $= \dfrac{\text{Net Profit before Interest and Tax}}{\text{Capital Employed}} \times 100$

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

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

Profit before interest and tax $= ₹30,000 + ₹1,800 = ₹31,800$

Capital Employed = Share Capital + General Reserve + Statement of Profit and Loss + 9% Debentures

$$= ₹50,000 + ₹5,000 + ₹15,000 + ₹20,000$$

$$= ₹90,000.$$

Q. 12. From the 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%.

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

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 = $\dfrac{2,40,000}{4,40,000}$

Profit before Interest and Tax

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

$$= 1.833 \text{ times}$$

Q. 13. From the following information, calculate inventory turnover ratio; Revenue from operations ₹16,00,000; Average Inventory ₹2,20,000; Gross Loss Ratio 5%.

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

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 = $\dfrac{₹ 16,80,000}{₹ 2,20,000} = 7.64 \text{ times}$

Q. 14. 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.

Ans. (a) Return on Investment

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

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 $= \dfrac{₹14,50,000}{₹ 88,00,000} \times 100 = 16.47\%$

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

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 $= \dfrac{1,15,00,000}{80,00,000} = 1.44 : 1.$

Q. 15. From the given information, calculate the inventory turnover ratio. Revenue from Operations: ₹2,00,000; GP: 25% on cost; Inventory at the beginning is 1/3 of the inventory at the end which was 30% of revenue from operations. **[CBSE Delhi 2010]**

Ans.

Gross Profit	$= 2,00,000 \times \dfrac{25}{125} = ₹40,000$	
Cost of Revenue from Operations	$= 2,00,000 - 40,000 = ₹1,60,000$	
Closing Inventory	$= 2,00,000 \times \dfrac{30}{100} = ₹60,000$	
Opening Inventory	$= 60,000 \times \dfrac{1}{3} = ₹20,000$	
Average Inventory	$= \dfrac{20,000 + 60,000}{2} = ₹40,000$	
Inventory Turnover Ratio	$= \dfrac{\text{Cost of Revenue from Operations}}{\text{Average Inventory}}$	
	$= \dfrac{₹1,60,000}{₹40,000} = 4 \text{ times.}$	

Q. 16. 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. **[CBSE Delhi 2016]**

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

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 $= \dfrac{₹2,10,000}{₹3,85,000} \times 100 = 54.55\%$

Q. 17. From the following, calculate 'Trade Receivables Turnover Ratio':

Total Revenue from Operations for the year—₹8,40,000

Cash Revenue from Operations—40% of Credit Revenue from Operations

Closing Trade Receivables—₹2,00,000

Excess of Closing Trade Receivables over Opening Trade Receivables —₹80,000.

[CBSE (AI) 2016(C)]

Ans. Trade Receivables Turnover Ratio $= \dfrac{\text{Credit Revenue from Operations}}{\text{Average Trade Receivables}}$

$= \dfrac{₹6,00,000}{₹1,60,000} = 3.75$ Times

Working Notes:

1. Calculation of Credit Revenue from Operations:

Let Credit Revenue from Operations $= x$

Cash Revenue from Operations $= 40\%$ of $x = 4x/10$

$$x + 4x/10 = ₹8,40,000$$
$$10x + 4x = ₹84,00,000$$
$$14x = ₹84,00,000$$
$$x = ₹6,00,000 \text{ (Credit Revenue from Operations)}$$

2. Average Trade Receivables $= \dfrac{\text{Opening Trade Receivables} + \text{Closing Trade Receivables}}{2}$

$= \dfrac{₹1,20,000 + ₹2,00,000}{2} = ₹1,60,000$

Q. 18. (a) From the following information, compute '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.

[CBSE (F) 2013]

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

$= ₹3,60,000 + ₹1,60,000$

$= ₹5,20,000$

Long-term Debts $=$ Total Debts $-$ Current Liabilities

$= ₹3,60,000 - ₹40,000$

$= ₹3,20,000$

Total Assets to Debt Ratio $= \dfrac{\text{Total Assets}}{\text{Long-term Debts}}$

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

(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.

Q. 19. *(a)* Compute 'Working Capital Turnover Ratio' from the following information:

Cash Sales ₹1,30,000; Credit Sales ₹3,80,000; Sales Returns ₹10,000; Liquid Assets ₹1,40,000; Current Liabilities ₹1,05,000 and Inventory ₹90,000.

(b) Calculate 'Debt to Equity Ratio' from the following information:

Total Assets ₹3,50,000; Total Debt ₹2,50,000 and Current Liabilities ₹80,000.

[CBSE Delhi 2013]

Ans. *(a)* Working Capital Turnover Ratio $= \dfrac{\text{Net Sales}}{\text{Working Capital}}$

$$= \dfrac{\text{Cash Sales} + \text{Credit Sales} - \text{Sales Return}}{\text{Current Assets} - \text{Current Liabilities}}$$

$$= \dfrac{1,30,000 + 3,80,000 - 10,000}{1,40,000 + 90,000 - 1,05,000}$$

$$= \dfrac{₹5,00,000}{₹1,25,000} = 4 \text{ times}$$

(b) Debt to Equity Ratio $= \dfrac{\text{Debt}}{\text{Equity}}$

Long-term Debts $=$ Total Debts – Current Liabilities

$= ₹2,50,000 - ₹80,000 = ₹1,70,000$

Shareholders' Funds (Equity) $=$ Total Assets – Total Debts

$= ₹3,50,000 - ₹2,50,000 = ₹1,00,000$

Debt to Equity Ratio $= \dfrac{₹1,70,000}{₹1,00,000}$

$= 1.7:1.$

Q. 20. Opening Inventory : ₹60,000; Closing Inventory : ₹1,00,000; Inventory turnover ratio 8 times; Selling price 25% above cost; Calculate the Gross Profit Ratio. *[CBSE Delhi 2009; (AI) 2009]*

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

$= ₹80,000$

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

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

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

$= ₹6,40,000 + ₹1,60,000$

$= ₹8,00,000$

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

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

$= 20\%.$