

**Short Questions for NCERT Accountancy Solutions Part 2 Class 12 Chapter 5****1. What do you mean by Ratio Analysis?**

It is a quantitative analysis of data present in a financial statement. It shows the relationship between items present in the Balance sheet and the Income Statement. It helps in calculating operational efficiency and solvency and in determining the profitability of a firm. Ratio is a statistical measure which helps in comparing relationships between two or more figures. Analyzing ratios presents vital pieces of information to accounting users about the firm's financial position, performance and viability. It also helps in setting up new policies and frameworks by the management.

**2. What are the various types of ratios?**

Ratios can be classified into two types:

1. Traditional Classification
2. Functional Classification

**Traditional Classification:** Traditional classification is based on financial statements such as Balance sheets and P & L accounts. The ratios are divided on the basis of accounts of financial statements and are as follows:

- i. Income Statement Ratios such as Gross Profit Ratios
- ii. Balance Sheet Ratios such as Debt Equity Ratio, Current Ratio
- iii. Composite Ratio: Ratios that contain elements from both Trading and P & L Account.

**Functional Classification:** These ratios are based on the functional need of calculating ratios. This ratio helps calculate the solvency, liquidity, profitability and financial performance of a business. Such ratios are:

- i. Liquidity Ratio: Ratios used to determine the solvency of short term
- ii. Solvency Ratio: Ratios used to determine the solvency of long term
- iii. Activity Ratio: Ratios used for determining the operating efficiency of the business. These ratios are related to sales and the cost of goods sold.

iv. Probability Ratio: Ratios used to determine the financial performance and viability of the firm.

### 3. 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 Ratio:** This ratio is a relationship between the cost of goods sold and the average inventory maintained during a particular time period. It determines the efficiency with which a firm is able to manage its inventory.

$$\text{Inventory / Stock Turnover Ratio} = \frac{\text{Cost of Goods Sold}}{\text{Average Stock}}$$

$$\text{Cost of Goods Sold} = \text{Opening Stock} + \text{Purchases} + \text{Direct Expenses} - \text{Closing Stock}$$

$$\text{or, Cost of Goods Sold} = \text{Net Sales} - \text{Gross Profit}$$

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

b. **Trade Receivables Turnover Ratio:** Debtors turnover ratio, also known as the Receivables Turnover Ratio, is a measure used to check how quickly a credit sale is converted into cash. It shows the efficiency of a business firm in collecting debts from customers.

$$\text{Debtors Turnover Ratio} = \frac{\text{Net Credit Sales}}{\text{Average Accounts Receivables}}$$

$$\text{Net Credit Sales} = \text{Total Sales} - \text{Cash Sales}$$

$$\text{Average Accounts Receivables} = \frac{(\text{Opening Debtors} + \text{Opening B/R}) + (\text{Closing Debtors} + \text{Closing B/R})}{2}$$

c. **Trade Payables Turnover Ratio:** It is also known as Creditor's turnover ratio or account payable turnover ratio and is a liquidity ratio that measures the average number of times a firm pays its creditors in the course of an accounting period. It is used to measure the short-term liquidity of the firm.

$$\text{Payable Turnover Ratio} = \frac{\text{Net Credit Purchases}}{\text{Average Accounts Payable}}$$

$$\text{Net Credit Purchases} = \text{Total Purchases} - \text{Cash Purchases}$$

$$\text{Average Accounts Payable} = \frac{(\text{Opening Creditors} + \text{Opening B/P}) + (\text{Closing Creditors} + \text{Closing B/P})}{2}$$

d. **Working Capital Turnover Ratio:** The working capital turnover ratio is used to measure the efficiency of a company in using its working capital to support sales. It is a ratio based on which a firm's operations are funded, and the corresponding revenue generated from the business is calculated.

$$\text{Working Capital Turnover Ratio} = \frac{\text{Net Sales}}{\text{Working Capital}}$$

$$\text{Net Sales} = \text{Total Sales} - \text{Sales Return}$$

$$\text{Working Capital} = \text{Current Assets} - \text{Current Liabilities}$$

**4. 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?**

A firm's liquidity is measured by its capability to pay long-term dues. These dues include principal amount payment on the due date and interest payment on a regular basis. Long term solvency of a firm can be determined by the following ratios:

a. **Debt-Equity Ratio:** This ratio shows the relationship between owner funds (equity) and borrowed funds (debt). A lower debt-equity ratio provides more security to the people who are lending to the business. It also shows that a company is able to meet long-term dues or responsibilities.

$$\text{Debt-Equity Ratio} = \frac{\text{Long-term Debt}}{\text{Equity/ Share holders Fund}}$$

b. **Total Assets to Debt Ratio-** It is based on the relationship between total assets and long-term loans. It shows what percentage of the company's total assets are financed by creditors. A higher total assets to debt ratio makes the firm able to meet long-term requirements and provides more security to lenders.

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

c. **Interest Coverage Ratio:** This ratio is used to determine the easiness with which a company is able to pay interest on outstanding debts. It is calculated by dividing earnings before interest and taxes with interest payments. Having a higher interest coverage ratio means that company is able to meet its obligations skilfully.

$$\text{Interest Coverage Ratio} = \frac{\text{Net Profit before Interest and Tax}}{\text{Interest on Long-term Loans}}$$

5. **The average age of inventory is viewed as the average length of time inventory is held by the firm or as the average number of day's sales in inventory. Explain with reasons.**

**Inventory Turnover Ratio:** This ratio is a relationship between cost of goods sold and the average inventory maintained during a particular time period. It determines the efficiency with which a firm is able to manage its inventory.

$$\text{Inventory / Stock Turnover Ratio} = \frac{\text{Cost of Goods Sold}}{\text{Average Stock}}$$

$$\text{Cost of Goods Sold} = \text{Opening Stock} + \text{Purchases} + \text{Direct Expenses} - \text{Closing Stock}$$

$$\text{or, Cost of Goods Sold} = \text{Net Sales} - \text{Gross Profit}$$

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

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

It shows the average length for which the firm holds the inventory.

### Long Questions for NCERT Accountancy Solutions Part 2 Class 12 Chapter 5

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

For determining the short-term solvency of a business liquidity ratios are essential. There are two types of liquidity ratios:

1. Current Ratio
2. Liquid Ratio/ Quick Ratio

1. **Current Ratio:** This ratio deals with the relationship between current assets and liabilities. It is calculated as:

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

Current assets are those assets which can be easily converted into cash, whereas Current liabilities are liabilities that need to pay within that accounting period

### Importance of Current Ratio

Current ratio helps in determining a firm's ability to pay off the current liabilities on time. If there is more of current assets as compared to current liabilities, it provides a source of security to the creditors. The ideal ratio is 2:1 (Current Assets: Current Liabilities)

2. **Liquid Ratio**– It deals with the relationship between liquid assets and current liabilities. This ratio determines if the firm has sufficient funds for paying off the current liabilities on an immediate basis. It can be calculated as:

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

$$\text{Liquids Assets} = \text{Current Assets} - \text{Stock} - \text{Prepaid Expenses}$$

### Importance of Liquid Ratio

It is helpful in determining if a firm has funds that can be sufficient to pay off liabilities. It does not include stock or prepaid expenses as both these are not easily converted to cash. A ratio of 1:1 is ideal for maintaining the liquid ratio.

## 2. How would you study the solvency position of the firm?

A firm's solvency position can be best studied with the help of a group of ratios called Solvency Ratios. These ratios measure the financial position of the firm by measuring its ability to pay long-term liabilities, these long-term liabilities include principal amount payments on the due date and interest payments on a regular basis. The following ratios are used to determine the long-term solvency of a business.

1. **Debt-Equity Ratio**: This ratio shows the relationship between owner funds (equity) and borrowed funds (debt). A lower debt-equity ratio provides more security to the people who are lending to the business. It also shows that a company is able to meet long-term dues or responsibilities.

$$\text{Debt-Equity Ratio} = \frac{\text{Long-term Debt}}{\text{Equity/ Share holders Fund}}$$

2. Total Assets to Debt Ratio: It is based on the relationship between total assets and long-term loans. It shows what percentage of the company's total assets are financed by creditors. A higher total assets to debt ratio makes the firm able to meet long-term requirements and provides more security to lenders.

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

3. Interest Coverage Ratio: This ratio is used to determine the easiness with which a company is able to pay interest on outstanding debts. It is calculated by dividing earnings before interest and taxes with interest payments. Having a higher interest coverage ratio means that company is able to meet its obligations skilfully.

$$\text{Interest Coverage Ratio} = \frac{\text{Net Profit before Interest and Tax}}{\text{Interest on Long-term Loans}}$$

d. **Proprietary Ratio**– This ratio shows the relationship between Total Assets and Shareholders' funds. It is helpful in revealing the financial position of a business. A higher ratio ensures a greater degree of security for creditors. It is shown as:

$$\text{Proprietary Ratio} = \frac{\text{Shareholders Fund}}{\text{Total Assets}} \text{ or } \frac{\text{Equity}}{\text{Total Assets}}$$

### 3. What are important profitability ratios? How are these worked out?

Profitability ratios are calculated on the basis of profit earned by a business. This ratio gives a percentage which is used to assess the financial condition of a business

1. Return on Assets: This ratio measures the earnings per rupee from assets which are invested in the company. A higher profit ratio is good for the company.

$$\text{Return on Assets} = \text{Net Profit} \div \text{Total Assets}$$

2. Return on Equity: This ratio deals with measuring the profitability of equity fund that is invested by the company. It also measures how the owner's funds are utilised profitably to generate company revenues. A high ratio represents the better position of a company.

Return on Equity = Profit after Tax  $\div$  Net worth

Where Net worth = Equity share capital, and Reserve and Surplus

3. Earnings per share: This ratio helps in measuring profitability from an ordinary shareholder's viewpoint. A high ratio represents a well off company.

Earnings per share = Net Profit  $\div$  Total no of shares outstanding

4. Dividend per share: This ratio measures the amount of dividend that is distributed by the company to its shareholders at the end of an accounting period. A high ratio represents that the company has surplus cash.

Dividend per share = Amount Distributed to Shareholders  $\div$  No of Shares outstanding

5. Price Earnings Ratio: A profitability ratio that is used by an investor to check for the share price of the company, which can be undervalued or overvalued. It also indicates an expectation about the company's earnings and payback period for the investors.

Price Earnings Ratio = Market Price of Share  $\div$  Earnings per share

6. Return on capital employed: This ratio is all about the returns earned by the company from the funds invested in the business by its owners. A high ratio is indicative of a better position for the company.

Return on capital employed = Net Operating Profit  $\div$  Capital Employed  $\times$  100

7. Gross Profit: Gross profit ratio or GP ratio is a profitability ratio that deals with the relationship between gross profit and the total net sales revenue. This ratio is used to evaluate the operational performance of the business.

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

Gross Profit = Net Sales – Cost of Goods Sold

Net Sales = Total Sales – Sales Return

Cost of Goods Sold = Opening Stock + Purchases + Direct Expenses – Closing Stock

8. Net Profit: This is a profitability ratio that deals with the relationship between net profit after tax and net sales. It is calculated by dividing the net profit (after tax) by net sales.



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

$$\text{or, Net Profit Ratio} = \frac{\text{Profit Before Tax}}{\text{Net Sales}} \times 100$$

$$\text{or, Net Profit Ratio} = \frac{\text{Profit After Tax}}{\text{Net Sales}} \times 100$$

$$\text{Net Sales} = \text{Total Sales} - \text{Sales Return}$$

**4. 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:** This ratio deals with the relationship between current assets and liabilities. It is calculated as:

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

Current assets are those assets which can be easily converted into cash, whereas Current liabilities are liabilities that need to pay within that accounting period

### Importance of Current Ratio

Current ratio helps in determining a firm's ability to pay off the current liabilities on time. If there is more of current assets as compared to current liabilities, it provides a source of security to the creditors. The ideal ratio is 2:1 (Current Assets: Current Liabilities)

**2. Liquid Ratio**– It deals with the relationship between liquid assets and current liabilities. This ratio determines if the firm has sufficient funds to pay off the current liabilities on an immediate basis. It can be calculated as:

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

$$\text{Liquids Assets} = \text{Current Assets} - \text{Stock} - \text{Prepaid Expenses}$$

### Importance of Liquid Ratio

It is helpful in determining if a firm has funds that can be sufficient to pay off liabilities. It does not include stock or prepaid expenses as both these are not easily converted to cash. A ratio of 1:1 is ideal for maintaining the liquid ratio.



The current ratio is best suited for businesses where the available stock or inventories cannot be converted to cash easily. Examples of such industries can be locomotive companies, heavy machinery manufacturing companies etc., as heavy machinery, and tools cannot be sold easily. Similarly, businesses that can easily convert or get sold off prefer the liquid ratio as a measure to determine their liquidity. A service company is more likely to use liquid ratio as no stock is maintained.

There will be some instances when companies tend to change the ratio method used and choose accordingly. If a company is not maintaining any stock or inventory, liquid ratio is the best option, while if stock forms the majority of the company's assets, then current ratio is the best choice, as the liquid ratio of such a firm will be very low and that can create a negative impact on creditors. In such a case, current ratio is a better choice to determine the overall liquidity.

### Numerical Questions for NCERT Accountancy Solutions Part 2 Class 12 Chapter 5

**1. Following is the Balance Sheet of Raj Oil Mills Limited as at March 31, 2017. Calculate Current Ratio.**

Particulars	(₹)
<b>I. Equity and Liabilities:</b>	
<b>1. Shareholders' funds</b>	
a) Share capital	7,90,000
b) Reserves and surplus	35,000
<b>2. Current Liabilities</b>	
a) Trade Payables	72,000

<b>Total</b>	<b>8,97,000</b>
<b>II. Assets</b>	
<b>1. Non-current Assets</b>	
<b>a) Fixed assets</b>	
<b>Tangible assets</b>	<b>7,53,000</b>
<b>2. Current Assets</b>	
<b>a) Inventories</b>	<b>55,800</b>
<b>b) Trade Receivables</b>	<b>28,800</b>
<b>c) Cash and cash equivalents</b>	<b>59,400</b>
<b>Total</b>	<b>8,97,000</b>

$$\begin{aligned}
 \text{Current Ratio} &= \frac{\text{Current Assets}}{\text{Current Liabilities}} \\
 &= \frac{1,44,000}{72,000} \\
 &= 2 : 1
 \end{aligned}$$

$$\begin{aligned}
 \text{Current Assets} &= \text{Inventories} + \text{Trade Receivables} + \text{Cash} \\
 &= 55,800 + 28,800 + 59,400 \\
 &= ₹ 1,44,000
 \end{aligned}$$

Current Liabilities = Trade Payables = ₹ 72,000

2. Following is the Balance Sheet of Title Machine Ltd. as at March 31, 2017.

Particulars	Amount
	₹.
<b>I. Equity and Liabilities</b>	
<b>1. Shareholders' funds</b>	
a) Share capital	24,00,000
b) Reserves and surplus	6,00,000
<b>2. Non-current liabilities</b>	
a) Long-term borrowings	9,00,000
<b>3. Current liabilities</b>	
a) Short-term borrowings	6,00,000
b) Trade payables	23,40,000
c) Short-term provisions	60,000
<b>Total</b>	<b>69,00,000</b>
<b>II. Assets</b>	
<b>1. Non-current Assets</b>	
a) Fixed assets	
Tangible assets	45,00,000
<b>2. Current Assets</b>	
a) Inventories	12,00,000
b) Trade receivables	9,00,000
c) Cash and cash equivalents	2,28,000

d) Short-term loans and advances	72,000
Total	69,00,000

**Calculate Current Ratio and Liquid Ratio.**

1. Current Ratio

$$\begin{aligned} \text{Current Ratio} &= \frac{\text{Current Assets}}{\text{Current Liabilities}} \\ &= \frac{24,00,000}{30,00,000} \\ &= 0.8 : 1 \end{aligned}$$

Current Assets = Inventories + Trade Receivables + Cash + Short term Loans and Advances

$$= 12,00,000 + 9,00,000 + 2,28,000 + 72,000$$

$$= ₹ 24,00,000$$

Current Liabilities = Trade Payables + Short-term Borrowings + Short-term Provisions

$$= 23,40,000 + 6,00,000 + 60,000$$

$$= ₹ 30,00,000$$

2. Quick Ratio

$$\begin{aligned} \text{Quick Ratio} &= \frac{\text{Quick Assets}}{\text{Current Liabilities}} \\ &= \frac{12,00,000}{30,00,000} \\ &= 0.4 : 1 \end{aligned}$$

Quick Assets = Trade Receivables + Cash + Short term Loans and Advances

$$= 9,00,000 + 2,28,000 + 72,000$$

$$= ₹ 12,00,000$$

**3. Current Ratio is 3.5:1. Working Capital is ₹ 90,000. Calculate the amount of Current Assets and Current Liabilities.**

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

$$\text{or, } 3.5 = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

$$\text{or, Current Assets} = 3.5 \text{ Current Liabilities (1)}$$

$$\text{Working Capital} = \text{Current Assets} - \text{Current Liabilities}$$

$$\text{Working Capital} = 90,000$$

$$\text{or, Current Assets} - \text{Current Liabilities} = 90,000$$

$$\text{or, } 3.5 \text{ Current Liabilities} - \text{Current Liabilities} = 90,000 \text{ (from 1)}$$

$$\text{or, } 2.5 \text{ Current Liabilities} = 90,000$$

$$\text{or, Current Liabilities} = \frac{90,000}{2.5} = 36,000$$

$$\begin{aligned} \text{or, Current Assets} &= 3.5 \text{ Current Liabilities} \\ &= 3.5 \times 36,000 \\ &= 1,26,000 \end{aligned}$$

**4. 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.**

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

$$\begin{aligned} \text{or,} \\ \frac{4.5}{1} &= \frac{\text{Current Assets}}{\text{Current Liabilities}} \end{aligned}$$

$$\text{or, } 4.5 \text{ Current Liabilities} = \text{Current Assets}$$

$$\text{Quick ratio} = \frac{\text{Quick Assets}}{\text{Current Liabilities}}$$

or,

$$3:1 = \frac{\text{Quick Assets}}{\text{Current Liabilities}}$$

or, 3 Current Liabilities = Quick Assets

Quick Assets = Current Assets – Inventory = Current Assets – 36,000  
Quick Assets = Current Assets – Inventory = Current Assets – 36,000

Current Assets – Quick Assets = 36,000

or, 4.5 Current Liabilities – 3 Current Liabilities = 36,000

or, 1.5 Current Liabilities = 36,000

or, Current Liabilities = 24,000

Current Assets = 4.5 Current Liabilities

$$\begin{aligned} \text{or, Current Assets} &= 4.5 \times 24,000 \\ &= 1,08,000 \end{aligned}$$

**5. Current liabilities of a company are ₹ 75,000. If current ratio is 4:1 and liquid ratio is 1:1, calculate value of current assets, liquid assets and inventory.**

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

$$\text{or, } 4 = \frac{\text{Current Assets}}{75,000}$$

Or,  $4 \times 75,000 = \text{Current Assets}$

Or, Current Assets = 3,00,000

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

Or,

$$1 = \frac{\text{Liquid Assets}}{75,000}$$

Liquid Assets = 75,000

Inventory = Current Assets – Liquid Assets

= 3, 00,000 – 75,000

= 2, 25,000

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

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

or,

$$2 = \frac{1,00,000}{\text{Current Liabilities}}$$

$$\begin{aligned}\text{or, Current Liabilities} &= \frac{1,00,000}{2} \\ &= 50,000\end{aligned}$$

Current Assets = Liquid Assets + Inventory

= 1, 00,000 + 20,000

= 1, 20,000

$$\begin{aligned}\text{Current Ratio} &= \frac{\text{Current Assets}}{\text{Current Liabilities}} \\ &= \frac{1,20,000}{50,000} \\ &= \frac{2.4}{1} = 2.4 : 1\end{aligned}$$

**7. Calculate debt equity ratio from the following information:**

	₹
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Total Assets	15,00,000
Current Liabilities	6,00,000
Total Debts	12,00,000

$$\text{Debt Equity Ratio} = \frac{\text{Debt}}{\text{Equity}}$$

$$\begin{aligned} \text{Equity} &= \text{Total Assets} - \text{Total Debts} \\ &= 15,00,000 - 12,00,000 \\ &= 3,00,000 \end{aligned}$$

Long Term Debts = Total Debts – Current Liabilities

$$\text{Debt Equity Ratio} = \frac{\text{Long Term Debt}}{\text{Equity}}$$

Or,

$$\text{Debt Equity Ratio} = \frac{6,00,000}{3,00,000} = \frac{2}{1} = 2:1$$

**8. Calculate Current Ratio if:**

**Inventory is ₹ 6, 00,000; Liquid Assets ₹ 24, 00,000; Quick Ratio 2:1.**

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

Or,

$$2 = \frac{24,00,000}{\text{Current Liabilities}}$$

$$\begin{aligned} \text{Current Liabilities} &= \frac{24,00,000}{2} \\ &= 12,00,000 \end{aligned}$$

Current Assets = Liquid Assets + Inventory

$$\begin{aligned} &= 24,00,000 + 6,00,000 \\ &= 30,00,000. \end{aligned}$$

$$\begin{aligned} \text{Current Ratio} &= \frac{\text{Current Assets}}{\text{Current Liabilities}} \\ &= \frac{30,00,000}{12,00,000} = \frac{2.5}{1} = 2.5 : 1 \end{aligned}$$

9. Compute Stock Turnover Ratio from the following information:

	₹
Net Revenue from Operations	2,00,000
Gross Profit	50,000
Inventory at the end	60,000
Excess of inventory at the end over inventory in the beginning	20,000

$$\text{Inventory Turnover Ratio} = \frac{\text{Cost of Goods Sold}}{\text{Average Inventory}}$$

$$\begin{aligned} \text{Cost of Goods Sold} &= \text{Net Sales} - \text{Gross Profit} \\ &= 2,00,000 - 50,000 \\ &= 1,50,000 \end{aligned}$$

$$\begin{aligned} \text{Inventory in the beginning} &= \text{Inventory at the end} - 20,000 \\ &= 60,000 - 20,000 \\ &= 40,000 \end{aligned}$$

$$\begin{aligned} \text{Average Inventory} &= \frac{\text{Inventory in the beginning} + \text{Inventory at the end}}{2} \\ &= \frac{40,000 + 60,000}{2} \\ &= 50,000 \end{aligned}$$

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

10. Calculate following ratios from the following information:

(i) Current ratio (ii) Acid test ratio (iii) Operating Ratio (iv) Gross Profit Ratio

	₹
Current Assets	35,000
Current Liabilities	17,500
Inventory	15,000
Operating Expenses	20,000

Revenue from Operations	60,000
Cost of Goods Sold	30,000

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

$$\text{Current Ratio} = \frac{35,000}{17,500} = 2:1$$

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

$$\begin{aligned}\text{Liquid Assets} &= \text{Current Assets} - \text{Inventory} \\ &= 35,000 - 15,000 \\ &= 20,000\end{aligned}$$

$$\text{Acid Test Ratio} = \frac{20,000}{17,500} = \frac{1.143}{1} = 1.143:1$$

iii)

$$\begin{aligned}\text{Operating Ratio} &= \frac{(\text{Cost of Goods Sold} + \text{Operating Expenses})}{\text{Net Revenue from Operations}} \times 100 \\ &= \frac{(30,000 + 20,000)}{60,000} \times 100 \\ &= \frac{50,000}{60,000} \times 100 = 83.33\%\end{aligned}$$

iv)

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

$$\begin{aligned} \text{Gross Profit} &= \text{Net Revenue from Operations} - \text{Cost of Goods Sold} \\ &= 60,000 - 30,000 \\ &= 30,000 \end{aligned}$$

$$\text{Gross Profit Ratio} = \frac{30,000}{60,000} \times 100 = 50\%$$

11. 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	25,20,000
Net Profit	3,60,000
Cost of Revenue from Operations	19,20,000
Long-term Debts	9,00,000
Trade Payables	2,00,000
Average Inventory	8,00,000
Current Assets	7,60,000
Fixed Assets	14,40,000

Current Liabilities	6,00,000
Net Profit before Interest and Tax	8,00,000

(i)

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

$$\begin{aligned}\text{Gross Profit} &= \text{Net Revenue from Operations} - \text{Cost of Revenue from Operations} \\ &= 25,20,000 - 19,20,000 \\ &= 6,00,000\end{aligned}$$

$$\text{Gross Profit Ratio} = \frac{6,00,000}{25,20,000} \times 100 = 23.81$$

(ii)

$$\begin{aligned}\text{Inventory Turnover Ratio} &= \frac{\text{Cost of Revenue from Operations}}{\text{Average Inventory}} \\ &= \frac{19,20,000}{8,00,000} \\ &= 2.4 \text{ times}\end{aligned}$$

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

$$\begin{aligned} \text{Current Assets} &= \text{Liquid Assets} + \text{Inventory} \\ &= 7,60,000 + 8,00,000 \\ &= 15,60,000 \end{aligned}$$

$$\text{Current Ratio} = \frac{15,60,000}{6,00,000} = \frac{2.6}{1} = 2.6 : 1$$

(iv)

$$\begin{aligned} \text{Liquid Ratio} &= \frac{\text{Liquid Assets}}{\text{Current Liabilities}} \\ &= \frac{7,60,000}{6,00,000} \\ &= \frac{1.27}{1} \\ &= 1.27 : 1 \end{aligned}$$

(v)

$$\begin{aligned} \text{Net Profit Ratio} &= \frac{\text{Net Profit}}{\text{Net Revenue from Operations}} \times 100 \\ &= \frac{3,60,000}{25,20,000} \times 100 \\ &= 14.28\% \end{aligned}$$

(vi)

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

$$\begin{aligned} \text{Working Capital} &= \text{Current Assets} - \text{Current Liabilities} \\ &= 15,60,000 - 6,00,000 \\ &= 9,60,000 \end{aligned}$$



$$\begin{aligned}\text{Working Capital Ratio} &= \frac{25,20,000}{9,60,000} \\ &= 2.625 \text{ times}\end{aligned}$$

12. Compute Gross Profit Ratio, Working Capital Turnover Ratio, Debt Equity Ratio and Proprietary Ratio from the following information:

	₹
Paid-up Share Capital	5,00,000
Current Assets	4,00,000
Revenue from Operations	10,00,000
13% Debentures	2,00,000
Current Liabilities	2,80,000
Cost of Revenue from Operations	6,00,000

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

$$\begin{aligned}\text{Gross Profit} &= \text{Net Revenue from Operations} - \text{Cost of Revenue from Operations} \\ &= 10,00,000 - 6,00,000 \\ &= 4,00,000\end{aligned}$$

$$\text{Gross Profit Ratio} = \frac{4,00,000}{10,00,000} \times 100 = 40\%$$

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

$$\begin{aligned}\text{Working Capital} &= \text{Current Assets} - \text{Current Liabilities} \\ &= 4,00,000 - 2,80,000 \\ &= 1,20,000\end{aligned}$$

$$\begin{aligned}\text{Working Capital Ratio} &= \frac{10,00,000}{1,20,000} \\ &= 8.33 \text{ times.}\end{aligned}$$



$$\begin{aligned}\text{Debt Equity Ratio} &= \frac{\text{Debt}}{\text{Equity}} \\ &= \frac{2,00,000}{5,00,000} = 2 : 5 = 0.4 : 1\end{aligned}$$

$$\text{Proprietary Ratio} = \frac{\text{Shareholders Funds}}{\text{Total Assets}}$$

$$\begin{aligned}\text{Total Assets} &= \text{Paid up Capital} + \text{Debentures} + \text{Current Liabilities} \\ &(\because \text{Total Liabilities} = \text{Total Assets}) \\ &= 5,00,000 + 2,00,000 + 2,80,000 \\ &= 9,80,000\end{aligned}$$

$$\text{Proprietary Ratio} = \frac{5,00,000}{9,80,000} = 25 : 49 = 0.51 : 1$$

**13. Calculate Inventory Turnover Ratio if:**

Inventory in the beginning is ₹. 76,250, Inventory at the end is 98,500, Gross Revenue from Operations is ₹. 5, 20,000, Sales Return is ₹. 20,000, and Purchases is ₹. 3, 22,250.

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

$$\begin{aligned} \text{Cost of Revenue from Operations} &= \text{Inventory in the beginning} + \text{Purchases} - \text{Inventory at the end} \\ &= 76,250 + 3,22,250 - 98,500 \\ &= 3,00,000 \end{aligned}$$

$$\begin{aligned} \text{Average Inventory} &= \frac{\text{Inventory in the beginning} + \text{Inventory at the end}}{2} \\ &= \frac{76,250 + 98,000}{2} \\ &= 87,375 \end{aligned}$$

$$\text{Inventory Turnover Ratio} = \frac{3,00,000}{87,375} = 3.43 \text{ times}$$

14. Calculate Inventory Turnover Ratio from the data given below:

	₹
Inventory in the beginning of the year	10,000
Inventory at the end of the year	5,000
Carriage	2,500
Revenue from Operations	50,000
Purchases	25,000

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

$$\begin{aligned}\text{Cost of Revenue from Operations} &= \text{Inventory in the beginning} + \text{Purchases} + \text{Carriage} - \text{Inventory at the end} \\ &= 10,000 + 25,000 + 2,500 - 5,000 \\ &= 32,500\end{aligned}$$

$$\begin{aligned}\text{Average Inventory} &= \frac{\text{Inventory in the beginning} + \text{Inventory at the end}}{2} \\ &= \frac{10,000 + 5,000}{2} \\ &= 7,500\end{aligned}$$

$$\text{Inventory Turnover Ratio} = \frac{32,500}{7,500} = 4.33 \text{ times}$$

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

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

$$\text{or, } 8 = \frac{\text{Cost of Revenue from Operations}}{20,000}$$

$$\text{or, Cost of Revenue from Operations} = 20,000 \times 8$$

$$\text{or, Cost of Revenue from Operations} = 1,60,000$$

Let Sale Price be ₹ 100

Then Profit is ₹ 20

Hence, the Cost of Revenue from Operations = ₹ 100 - ₹ 20 = ₹ 80

If the Cost of Revenue from Operations is ₹ 80, then Revenue from Operations = 100

If the Cost of Revenue from Operations is Rs 1, then Revenue from Operations =  $\frac{100}{80}$

If the Cost of Revenue from Operations is 1,60,000 then,

$$\text{Revenue from Operations} = \frac{100}{80} \times 1,60,000 = 2,00,000$$

$$\begin{aligned} \text{Profit} &= \text{Net Revenue from Operations} - \text{Cost of Revenue from Operations} \\ &= 2,00,000 - 1,60,000 \\ &= 40,000 \end{aligned}$$

**16. You are able to collect the following information about a company for two years:**

		2015-16	2016-17
Trade receivables on Apr. 01	₹.	4,00,000	₹ 5,00,000
Trade receivables on Mar. 31			₹ 5,60,000
Stock in trade on Mar. 31	₹.	6,00,000	₹ 9,00,000
Revenue from operations (at gross profit of 25%)	₹.	3,00,000	₹ 24,00,000

**Calculate Inventory Turnover Ratio and Trade Receivables Turnover Ratio.**

$$\text{Trade Receivables Turnover Ratio} = \frac{\text{Net Credit Sales}}{\text{Average Trade Receivables}}$$

$$\begin{aligned} \text{Average Trade Receivables} &= \frac{\text{Trade Receivables in the beginning} + \text{Trade Receivables at the end}}{2} \\ &= \frac{5,00,000 + 5,60,000}{2} \\ &= 5,30,000 \end{aligned}$$

$$\text{Trade Receivables Turnover Ratio} = \frac{24,00,000}{5,30,000} = 4.53 \text{ times}$$

17. 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	Note No.	₹.
<b>I. Equity and Liabilities:</b>		
<b>1. Shareholders' funds</b>		
a) Share capital		10,00,000
b) Reserves and surplus		9,00,000



<b>2. Non-current Liabilities</b>		
Long-term borrowings		12,00,000
<b>3. Current Liabilities</b>		
Trade payables		5,00,000
<b>Total</b>		<b>36,00,000</b>
<b>II. Assets</b>		
<b>1. Non-current Assets</b>		
a) Fixed assets		
Tangible assets		18,00,000
<b>2. Current Assets</b>		
a) Inventories		4,00,000
b) Trade Receivables		9,00,000
c) Cash and cash equivalents		5,00,000
<b>Total</b>		<b>36,00,000</b>

**Additional Information: Revenue from Operations ₹. 18, 00,000**

1. Debt-Equity Ratio

$$\begin{aligned}\text{Debt Equity Ratio} &= \frac{\text{Debt}}{\text{Equity}} \\ &= \frac{12,00,000}{19,00,000} \\ &= 0.63 : 1\end{aligned}$$

Debt = Long Term Borrowings = ₹ 12,00,0000

Equity = Share Capital + Reserve and Surplus

= 10, 00,000 + 9, 00,000

= ₹ 19, 00,000

2. Working Capital Turnover Ratio

$$\begin{aligned}\text{Working Capital Turnover Ratio} &= \frac{\text{Revenue from Operations}}{\text{Working Capital}} \\ &= \frac{18,00,000}{13,00,000} \\ &= 1.39 \text{ times}\end{aligned}$$

Revenue from Operations = ₹ 18, 00,000

Working Capital = Current Assets – Current Liabilities

= 18, 00,000 – 5, 00,000

= ₹ 13, 00,000

3. Trade Receivables Turnover Ratio

$$\begin{aligned}\text{Trade Receivables Turnover Ratio} &= \frac{\text{Net Credit Sales}}{\text{Average Trade Receivables}} \\ &= \frac{18,00,000}{9,00,000} \\ &= 2 \text{ times}\end{aligned}$$

Net Credit Sales = ₹ 18, 00,000

Average Trade Receivables = ₹ 9, 00,000

18. From the following information, calculate the following ratios:

i) Quick Ratio

ii) Inventory Turnover Ratio

iii) Return on Investment

	₹.
Inventory in the beginning	50,000
Inventory at the end	60,000
Revenue from operations	4,00,000
Gross Profit	1,94,000
Cash and Cash Equivalents	40,000
Trade Receivables	1,00,000
Trade Payables	1,90,000
Other Current Liabilities	70,000
Share Capital	2,00,000
Reserves and Surplus	1,40,000

(Balance in the Statement of Profit & Loss A/c)

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

$$\begin{aligned} \text{Quick Assets} &= \text{Cash} + \text{Debtors} \\ &= 40,000 + 1,00,000 \\ &= 1,40,000 \end{aligned}$$

$$\begin{aligned} \text{Current Liabilities} &= \text{Creditors} + \text{Outstanding Expenses} \\ &= 1,90,000 + 70,000 \\ &= 2,60,000 \end{aligned}$$

$$\text{Quick Ratio} = \frac{1,40,000}{2,60,000} = 7:13 = 0.54:1$$

(ii)

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

$$\begin{aligned} \text{Cost of Revenue from Operations} &= \text{Revenue from Operations} - \text{Gross Profit} \\ &= 4,00,000 - 1,94,000 \\ &= 2,06,000 \end{aligned}$$

$$\begin{aligned} \text{Average Inventory} &= \frac{\text{Inventory in the beginning} + \text{Inventory at the end}}{2} \\ &= \frac{50,000 + 60,000}{2} \\ &= 55,000 \end{aligned}$$

$$\text{Inventory Turnover Ratio} = \frac{2,06,000}{55,000} = 3.74 \text{ times}$$

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

$$\begin{aligned} \text{Capital Employed} &= \text{Equity Share Capital} + \text{Profit and Loss} \\ &= 2,00,000 + 1,40,000 \\ &= 3,40,000 \end{aligned}$$

$$\text{Return on Investment} = \frac{1,40,000}{3,40,000} \times 100 = 41.17\%$$

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

	₹
Equity Share Capital	75,000
Preference Share Capital	25,000
General Reserve	45,000
Balance in the Statement of Profits and Loss	30,000
Debentures	75,000
Trade Payables	40,000
Outstanding Expenses	10,000

$$(a) \text{ Debt Equity Ratio} = \frac{\text{Debt}}{\text{Equity}}$$

$$\begin{aligned} \text{Equity/Shareholders Funds} &= \text{Equity Share Capital} + \text{Preference Share Capital} + \text{General Reserve} \\ &\quad + \text{Accumulated Profit} \\ &= 75,000 + 25,000 + 45,000 + 30,000 \\ &= 1,75,000 \end{aligned}$$

$$\text{Debt} = \text{Debentures} = 75,000$$

$$\text{Debt Equity Ratio} = \frac{75,000}{1,75,000} = \frac{3}{7} = 0.43:1$$

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

$$\begin{aligned} \text{Total Assets} &= \text{Equity Share Capital} + \text{Preference Share Capital} + \text{General Reserve} \\ &\quad + \text{Accumulated Profits} + \text{Debentures} + \text{Sundry Creditors} + \text{Outstanding Expenses} \\ &(\because \text{Total liabilities is equal to total assets}) \\ &= 75,000 + 25,000 + 45,000 + 30,000 + 75,000 + 40,000 + 10,000 \\ &= 3,00,000 \end{aligned}$$

$$\text{Total Assets to Debt Ratio} = \frac{3,00,000}{75,000} = 4:1$$

(c)

$$\text{Proprietary Ratio} = \frac{\text{Shareholder Funds}}{\text{Net Assets}}$$

$$\text{Proprietary Ratio} = \frac{1,75,000}{3,00,000} = \frac{7}{12} = 7:12 \text{ or } 0.58:1$$

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

$$\begin{aligned}
 \text{Operating Ratio} &= \frac{(\text{Cost of Revenue from Operations} + \text{Operating Expenses})}{\text{Net Revenue from Operations}} \times 100 \\
 &= \frac{(1,50,000 + 60,000)}{2,50,000} \times 100 \\
 &= \frac{2,10,000}{2,50,000} \times 100 = 84\%
 \end{aligned}$$

21. 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	50,000
Revenue from Operations	1,00,000
Inventory	15,000
Trade Receivables	27,500
Cash and Cash Equivalents	17,500
Current Liabilities	40,000
Land & Building	50,000
Plant & Machinery	30,000
Furniture	20,000



(i)

$$\begin{aligned}\text{Gross Profit Ratio} &= \frac{\text{Gross Profit}}{\text{Revenue from Operations}} \times 100 \\ &= \frac{50,000}{1,00,000} \times 100 = 50\%\end{aligned}$$

(ii)

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

$$\begin{aligned}\text{Current Assets} &= \text{Inventory} + \text{Trade Receivables} + \text{Cash and Cash Equivalents} \\ &= 15,000 + 27,500 + 17,500 \\ &= 60,000\end{aligned}$$

$$\text{Current Ratio} = \frac{60,000}{40,000} = 1.5 : 1$$

(iii)

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

$$\begin{aligned}\text{Liquid Assets} &= \text{Current Assets} - \text{Inventory} \\ &= 60,000 - 15,000 \\ &= 45,000\end{aligned}$$

$$\text{Acid Test Ratio} = \frac{45,000}{40,000} = 1.125 : 1$$

(iv)

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

$$\begin{aligned} \text{Cost of Revenue from Operations} &= \text{Revenue from Operations} - \text{Gross Profit} \\ &= 1,00,000 - 50,000 \\ &= 50,000 \end{aligned}$$

Average Inventory = 15,000\*

**Note:** As the values for inventory in the beginning and inventory at the end is not given, the amount of inventory is taken as average.

$$\text{Inventory Turnover Ratio} = \frac{50,000}{15,000} = 3.33 \text{ times}$$

(v)

$$\text{Fixed Assets Turnover Ratio} = \frac{\text{Revenue from Operations}}{\text{Net Fixed Assets}}$$

$$\begin{aligned} \text{Net Fixed Assets} &= \text{Land \& Building} + \text{Plant and Machinery} + \text{Furniture} \\ &= 50,000 + 30,000 + 20,000 \\ &= 1,00,000 \end{aligned}$$

$$\text{Fixed Assets Turnover Ratio} = \frac{1,00,000}{1,00,000} = 1:1$$

22. From the following information calculate Gross Profit Ratio, Inventory Turnover Ratio and Trade Receivables Turnover Ratio.

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

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

$$\begin{aligned} \text{Gross Profit} &= \text{Net Revenue from Operations} - \text{Cost of Revenue from Operations} \\ &= 3,00,000 - 2,40,000 \\ &= 60,000 \end{aligned}$$

$$\text{Gross Profit Ratio} = \frac{60,000}{3,00,000} \times 100 = 20\%$$

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

$$\begin{aligned} \text{Average Inventory} &= \frac{\text{Inventory in the beginning} + \text{Inventory at the end}}{2} \\ &= \frac{58,000 + 62,000}{2} \\ &= 60,000 \end{aligned}$$

$$\text{Inventory Turnover Ratio} = \frac{2,40,000}{60,000} = 4 \text{ times}$$

$$\begin{aligned}\text{Trade Receivables Turnover Ratio} &= \frac{\text{Net Revenue from Operations}}{\text{Average Trade Receivables}} \\ &= \frac{3,00,000}{32,000} = 9.4 \text{ times}\end{aligned}$$

**Note:** In this solution, the Trade Receivables are assumed to be the Average Trade Receivables

