UNIT 6 RATIO ANALYSIS

Structure **Page Nos.**

6.0 INTRODUCTION

The stakeholders of a firm viz., shareholders, creditors, suppliers, managers, employees, tax authorities, government and others are interested broadly in knowing what the firm is doing and whether the firm is financially sound or otherwise. Ratio analysis is the quantitative interpretation of the company's financial performance. It provides valuable information about the organization's profitability, solvency, operational efficiency and liquidity positions as represented by the financial statements. The information requirement of each of the stakeholders may be different. Trade creditors and short term lenders are interested in knowing the ability of the firm to meet short term liabilities, whereas term lending institution and banks are interested in the long term survival of the firm. Similarly, others stakeholders may have other information requirements.

Ratio analysis refers to the analysis of various pieces of financial information in the financial statements of a business. They are mainly used by external analysts to determine various aspects of a business, such as its profitability, liquidity, and solvency. Before introducing you to the concept of financial analysis, let us recapitulate on the various types of financial statements, as all the variables used in ratio analysis are taken from these statements.

1. **Profit & Loss A/C:** The income statement or trading and profit and loss account shows the various variables regarding expenses and revenue and the aggregate difference between these two as either net profit or net loss.

2. **Balance Sheet**: Balance sheet is a statement which shows the financial position of a firm on a particular date, it summarises the assets owned by the business and the claim of the owners and creditors against these assets in the form of liabilities as on the date of the statement.

3. **Profit & Loss Appropriation A/C**: This statement which is also known as profit and loss appropriation account is a link between P&L A/C and Balance sheet. The net profit shown in the P&L A/C is transferred to the balance sheet after appropriation through this statement. Retained earnings are the accumulated excess of earnings over losses and dividends.

4. **Fund Flow Statement**: This statement shows the sources of funds from which additional funds were derived and the use (application) of these funds.

5. **Cash Flow Statement:** This statement depicts the change in cash position from one period to another.

Financial statements are the means of providing general information regarding operational results and the financial position of a business firm. These statements do not reveal significant information such as efficiency of management strength and weakness of the firm, potential of further progress etc. In order to extract meaningful information, these statements need to be analyzed and interpreted for specific purposes. Analysis of financial statements is the systematic numerical calculation of the relationship between one fact with the other to measure the profitability, operational efficiency and the growth potential of the business. The main objectives of financial statement analysis and interpretation are as follows:

- Measuring financial soundness
- Judging solvency
- Measuring profitability
- Judging operational efficiency
- Indicating trends
- Assessing growth potential
- Inter firm and intra firm comparison.

A ratio is an arithmetical relation between two figures or variables. Financial ratio analysis is a study of ratios between various items or group of items in financial statements. Financial ratio analysis is an analytical tool for measuring the performance of an organisation. Ratio analysis is primarily used to analyse past performance and on the basis of this future projections are made.

Users of Financial Ratios

Financial ratio analysis is the process of establishing relationship between the variables of the balance sheet and profit and loss account in order to find out the strength and weakness of the firm. Ratio analysis is undertaken by the various stock holders in the firm viz. trade creditors, suppliers of long-term debt, investors and the management itself. Trade Creditors are interested in the firm's ability to meet claims in the short run. Their analysis will therefore, be confined to the firm's liquidity position in the short run.

Suppliers of long-term debt, on the other hand are more concerned with long-term solvency and survival. They analyse the firm's profitability over time, its ability to generate cash, its ability to repay interest and the principle amount. They also analyse the capital structure. Long-term suppliers of credit also analyse the historical financial statements but their main focus is to analyse its future solvency and profitability. Investors are interested in the firm's earnings and how these earnings are used. They concentrate on the firm's present and future profitability. They are also interested in the firm's financial structure to the extent that it influences the firm's earnings ability and risk.

The management of the firm would be interested in every aspect of the financial ratio analysis as, this helps them assess how efficiently and effectively the firm's resources are being used.

Nature of Ratio Analysis

Ratios are used as a bench mark for evaluating the financial position and performance of a firm. Accounting figures presented in the financial statements would convey some meaning only if they are seen in relation to the other variables. Ratios help the stakeholders in summarizing large quantities of financial information (data). Through ratio analysis one can make a qualitative judgment. The ratios basically reflect a quantitative relationship among different variables.

Standards of Comparison

A ratio itself would not provide any useful information, until and unless the ratios are compared with some standard. Standards of comparison may consist of:
Past ratios, i.e., ratios calculated from the past financial statements of the same firm.
Competitor's ratios, i.e., ratios of some selected firms preferably the firms having similar turnover. Another approach is to compare the firm's ratios with that of the market leader. Industry ratios, i.e., the average ratios of the industry to which the firm belongs.

6.1 OBJECTIVES

After going through this unit, you should be able to:

- provide a broad classification of ratios;
- learn how to extract useful information from financial statement through ratio analysis;
- recognize the diagnostic role of financial ratios;
- highlight the utility of financial ratios in credit analysis and competitive analysis, and
- identify ratios which are appropriate for the control of activities.

6.2 CATEGORIES OF RATIOS

The ratios are broadly classified under different categories which as follows

- Solvency Ratios
- Liquidity Ratios
- Activity Ratios
- Profitability Ratios
- Market Test Ratios

6.2.1 Long-term Solvency Ratios

All the funds that are used to run a company are not obtained directly from the owners. To manage business, companies usually take debt which can be in the form of deposits, debentures or loans. In the long-term debts that are taken by the business needs to be repaid along with interest. Solvency is referred to as the firm's ability to meet its long-term debt obligations.

Solvency ratios are a key component of the financial analysis which helps in determining whether a company has sufficient cash flow to manage the debt obligations that are due. Solvency ratios are also known as leverage ratios. It is believed that if a company has a low solvency ratio, it is more at the risk of not being able to fulfill its debt obligation and is likely to default in debt repayment. Solvency ratios vary with the type of industry, but as a good measure a solvency ratio of 0.5 is always considered as a good number.

a) Debt Equity Ratio
b) Shareholders Equity Ratio
c) Debt to Net Worth Ratio
d) Capital Gearing Ratio
e) Fixed Asset to Long-Term Funds Ratio
f) Proprietary Ratio
g) Dividend Cover
h) Interest Cover
i) Debt Service Coverage Ratio

a) **Debt Equity Ratio**: There are basically two sources of capital – equity and debt. Debts are raised when owners want to increase investment but are unwilling to dilute the equity or the cost of debt is less than that of equity. There are many ways to calculate this ratio but the most commonly used method is,

$$\text{Debt Equity Ratio} = \frac{Long\ term\ debt}{Share\ holder\ funds}$$

In other method instead of long term debts all the debts are taken into consideration. This ratio indicates the relationships between loan funds and net worth of the company. It also depicts the relative contribution of owners. A company with high components of debt capital relative to its equity is known as a highly geared company and *vice-versa.* There is no standard debt equity ratio and the same will vary from industry to industry. but as a good measure a solvency ratio of 0.5 is always considered as a good number

b) **Shareholder's Equity Ratio:** This ratio is calculated as follows:

$$\frac{Shareholder\ equity}{Total\ assets\ (tangible)}$$

The financial strength of a firm can be gauged by the proportion of equity capital in its capital structure, higher the proportion of equity, stronger is the firm's financial strength. This ratio depicts the relationship between the shareholders equity and the total assets. This ratio also indicates the degree to which unsecured creditors are protected against loss in the event of liquidation. Shareholders equity includes equity and preference capital plus reserves and surplus. An increase in this ratio implies that the dependence of the firm on outside sources of funds is decreasing.

c) **Debt to Net Worth Ratio**: This ratio is calculated as follows:

$$\frac{Long\ term\ debt}{Net\ worth}$$

This ratio computes long term debts of the firm to that of net worth. Net worth is calculated as capital and free reserves less fictitious assets like carry forward losses and deferred expenditure. This ratio is a refinement of the debt equity ratio and gives a factual idea of the adequacy of assets to meet long-term liabilities. If the debt ratio is higher, it represents the company is riskier. Low debt to net worth is indicative of a business that is stable.

d) **Capital Gearing Ratio:** This ratio indicates the degree to which the firm is trading on equity which in turn indicates the volatility of earnings available to shareholders. The fixed interest bearing funds includes debentures, long-term loans and preference share capital. Equity shareholders funds include equity share capital, and reserves and surplus. It is calculated as follows:

$$\frac{Fixed\ interest\ bearing\ funds}{Equity\ shareholder\ funds}$$

Companies with high levels of capital gearing will have a larger amount of debt relative to their equity value. A proper capital gearing is very important for the smooth running of the enterprise. It affects the profitability of the concern. In a low geared company, the fixed cost of capital will be lower and the equity shareholders will get a higher profit by way of dividend and in case of high gearing the fixed cost of capital will be higher and the profits to be distributed to the equity shareholders will be lower.

e) **Fixed Assets to Long-term Funds Ratio:** It is calculated as follows:

$$\frac{Fixed\ assets}{Long\ term\ funds}$$

This ratio indicates the proportion of long term funds (Share capital reserves and surplus and long term loans) deployed in fixed assets (gross fixed assets minus depreciation). A high ratio indicates the safety of funds in case of liquidation. This ratio also indicates the proportion of long-term funds invested in working capital.

f) **Proprietary Ratio: A** proprietary ratio is also known as equity ratio. It establishes a relationship between the proprietor's funds and the net assets or capital. It is calculated as follows:

$$\frac{Net\ worth}{Total\ assets}$$

Reserves which are created and earmarked for specific purposes should not be included in the calculation of net worth. A high ratio is an indication of a strong financial position.

g) **Interest Cover:** The interest coverage ratio is used to determine whether the company is able to pay interest on the outstanding debt obligations. It is calculated as follows:

$$\frac{Profit\ before\ interest\ depreciation\ and\ tax}{Interest}$$

The interest coverage ratio reflects the number of times interest charges are covered by the funds that are available for payment of interest. A higher coverage ratio is better for the solvency of the business while a lower coverage ratio indicates debt burden on the business. Generally a ratio of 2:1 is considered as adequate.

h) **Dividend Cover:** It is calculated as follows:

$$\frac{\textit{Net profit after tax}}{\textit{Dividend}}$$

This ratio indicates the number of times the dividends are covered by net profit. This ratio also highlights the retained earnings.

i) **Debt Service Coverage Ratio:** It is calculated as follows:

$$\frac{\textit{Profit before interest and taxes}}{\textit{Interest + perodic loan instalment}}$$

This ratio reflects the ability of the firm to service its obligations on account of interest payment and loan repayments. A high ratio is an indicator of the fact that the firm is less likely to default on payments.

☞ Check Your Progress 1

1) From the following statement calculate: (1) Current Ratio, (ii) Liquidity Ratio, (iii) Debt-Equity Ratio, (iv) Proprietary Ratio and (v) Solvency Ratio.

Condensed Balance Sheet

Liabilities	**Rs.**	**Assets**	**Rs.**
Paid up Capital	1,00,000	Fixed Assets less Dep.	2,19,810
Reserves and Surplus	84,500	Stock	49,460
Debentures	1,00,000	Trade Debtors	11,710
Bills Payable	6,500	Cash at Bank	26,020
	3,07,000		3,0,000

2) Balance Sheet of S.K. Ltd. is given below:

	Rs.		Rs.
Equity Capital	50,000	Fixed Assets	1,40,000
12% Pref. Capital	30,000	Stock	20,000
15% Debentures	70,000	Debtors	16,000
Capital Reserve	5,000	Bank	14,000
P and L Account	10,000		
Creditors	12,000		
Bank Overdraft	8,000		
Proposed Dividend	5,000		
	1,90,000		1,90,000

Calculate the Capital Gearing Ratio, Liquidity Ratio and Fixed Assets Ratio.

3) From the following information, calculate Interest Coverage Ratio, and Debt to Cash Flow Coverage Ratio:

Net Income After Tax	Rs. 15,630
Depreciation Charges	Rs. 20,000
Tax Rate	50% of net income
5% Mortgage Bonds	Rs. 2,50,000
Fixed Interest Charges	Rs. 14,750
Sinking Fund Appropriations	5% of Outstanding Bonds

6.2.2 Liquidity Ratios (Short-term Solvency Ratios)

a) **Current Ratio:** It is calculated as follows:

$$\frac{Current\ assets\ loans\ and\ advances}{Current\ liabilities\ and\ provisions}$$

This ratio measures the solvency of the company in the short run (1 year). Current assets are those assets which can be converted into cash within one accounting period (usually 1 year) and current liabilities are those liabilities which are payable within a year. A current ratio of 1.33:1 is the minimum ratio required by banks to finance working capital needs. A very high current ratio implies that the firm has blocked the funds either in inventories, debtors or idle cash.

b) **Quick Ratio or Liquid Ratio:** It is calculated as follows:

$$\frac{Current\ assets, loans\ \&\ advaces - Inventories}{Current\ liabilities\ \&\ Provisions - Bank\ Overdraft}$$

This ratio is a modification of the current ratio. In this ratio, inventories are subtracted from current assets and the bank overdraft is subtracted from current liabilities. The reason for doing so is that the bank overdraft is secured by inventories. This ratio depicts the ability of the firm to service current liabilities other than the bank overdraft.

c) **Absolute Liquid Ratio (Super Quick Ratio):** It is calculated as follows:

$$\frac{Absolute\ liquid\ Assets}{Current\ liabilities}$$

It is a ratio of absolute liquid assets to quick liabilities. However, for calculation purpose current liabilities are taken into consideration. Absolute liquid assets are cash, bank balances and marketable securities. An ideal absolute liquid ratio is taken as 1:2 or .5.

d) **Bank Finance to Working Capital Gap Ratio:** It is calculated as follows:

$$\frac{Short\ term\ bank\ borrowings}{Working\ Capital\ gap}$$

This ratio shows the dependence on bank finance for working capital. Working capital gap is equal to current assets minus current liabilities other than bank borrowings.

e) **Interval Measures:** A dynamic measure of liquidity, the interval measure is defined as:

$$\frac{Quick\ assets}{Average\ daily\ expenses\ on\ operations}$$

Interval measure shows the time interval for which the liquid assets of the firm will suffice to meet its operating expenditure.

☞ Check Your Progress 2

1. Following is the Balance Sheet of Idiot Limited as on 31st March, 2021.

Liabilities	Rs.	Assets	Rs.
Equity Share Capital	72,000	Plant and Machinery	1,35,000
Profit and Loss A/c	18,000	Stock	36,000
Debentures	45,000	Sundry Debtors	27,000
Sundry Creditors	70,200	Cash at Bank	6,840
Provision for Taxation	1,800	Prepaid Expenses	2,160
	2,07,000		2,07,000

Calculate the following ratios:

1) Current Ratio,
2) Liquidity Ratio.

What conclusions do you draw about the company on the basis of these ratios?

6.2.3 Activity or Turnover Ratios

a) **Inventory Turnover Ratio:** For manufacturing and trading firms a considerable amount of funds may be tied up in financing of raw material, work in progress and finished goods. A good inventory management practice is to keep inventory level consistent with the need to fulfill customer's order in time.

$$\text{Inventory Turnover Ratio} = \frac{Cost\ of\ goods\ sold}{Average\ inventory} \text{ or}$$

$$= \frac{Sales}{Average\ Inventory}$$

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

Higher the inventory turnover ratio or lower the stock turnover period the better it is.

b) **Debtors Turnover Ratio**: It is calculated as follows:

$$\frac{Credit\ Sales}{Average\ Debtors}$$

This ratio measures the efficiency of a firm in converting debtors into cash, higher ratios indicate better efficiency:

Average Collection Period: It is calculated as follows:

$$\frac{Average\ debtors}{Credit\ sales} \times 365$$

This ratio measures the time it takes to collect the amount from debtors.

c) **Creditors Turnover Ratio**: A business concern may not purchase its all items on cash basis. Sometimes, there may be credit purchase. This ratio is calculated to find the time taken in paying the creditors' amount. It is very similar to Debtors / Inventory Turnover Ratio. This ratio is otherwise called as creditors velocity.

$$\frac{Credit\ purchase}{Average\ creditors}$$

Average Payment Period

$$\frac{Average\ creditors}{Purchase} \times 365$$

This ratio measures the average time taken to pay for goods and services purchased by the company. In general, longer the period better it is, because the operations of the firms are financed interest free by suppliers. An unduly long period would indicate liquidity problem on one hand and may also impact the credit rating of the firm.

d) **Assets Turnover Ratio:** These ratios measure the firms ability to generate sales revenue in relation to the size of the asset investment.

i) Fixed Assets Turnover Ratio:

$$\frac{Sales}{Fixed\ assets}$$

This ratio measures sales per rupee of investment. This ratio measures the efficiency with which fixed assets are being employed. When the fixed assets of the firm are old and substantially depreciated the fixed asset turnover ratio tends to the high.

ii) Total Assets Turnover Ratio: It is calculated as follows:

$$\frac{Sales}{Total\ assets}$$

This ratio measures how efficiently assets are employed overall. The asset turnover ratio can be used as an indicator of the efficiency with which a company is using its assets to generate revenue. The higher the asset turnover ratio, the more efficient a company is at generating revenue from its assets.

(iii) Working Capital Turnover Ratio: It is calculated as follows:

$$\frac{Sales}{Capital\ Employed}$$

This ratio indicates the extent of working capital turned over in achieving sales. Working capital turnover measures how effective a business is at generating sales for every rupee of working capital put to use. A higher working capital turnover ratio is better, and indicates that a company is able to generate a larger amount of sales.

(iv) Sales to capital employed Ratio: It is calculated as follows:

$$\frac{Sales}{Capital\ employed}$$

This ratio indicates efficiency in utilization of capital employed in generating revenue. The sales to capital ratio, also known as the capital turnover ratio or sales to working capital ratio, is an efficiency ratio. The sales to capital ratio tell us how efficiently a company can turn one rupee of capital into one rupee of revenue.

☞ Check Your Progress 3

1. Compute the stock turnover ratio with the help of following figures relating to Meenakshi Limited:

Trading Account
For the year ending 31 st March, 2021

	Rs.		Rs.
To Opening Stock	15,920	By Sales	78,000
To Purchases	39,000	By Closing Stock	14,400
To Carriage Inwards	1,000		
To Gross Profit	36,480		
	92,400		92,400

2. Raj & Co. sells goods on cash as well as on credit. The following particulars are extracted from the books of accounts for the year 2021:

	Rs.
Total Gross Sales	1,50,000
Sales Returns	30,000
Total Debtors for Sales as on 31.12.21	10,500
Bills Receivable as on 31.12.21	13,500
Provision for Doubtful Debts as on 31.12.21	3,000
Total Creditors on 31.12.21	1,000

Calculate the Average Collection period.

3. Tyagi and Sons Limited purchases goods on cash and credit terms. From the following particulars obtained from the books, calculate the creditors turnover and average payable period.

	Rs.
Total Purchases	8,40,000
Cash Purchases	70,000
Purchases Returns	40,000
Creditors at the end of the year	1,20,000
Bills Payable at the end of the year	20,000
Provision for Discount on Creditors	7,500

4. The following is the Balance sheet of Sanchit Company Ltd. as on 31st 2021:

Liabilities	Rs.	Assets	Rs.
Share Capital	80,000	Fixed Assets	1,60,000
General Reserve	30,000	Debtors	60,000
Profit and Loss A/c	50,000	Bills Receivable	20,000
Mortgage Loan @	80,000	Cash at Bank	50,000

10%			
Creditors	40,000	Preliminary Expenses	10,000
Bills Payable	20,000		
Total	3,00,000		3,00,000

Other information:
Sales during the year 2020-21 amounted to Rs. 1, 60,000.

Calculate:

(i) Capital Turnover Ratio
(ii) Fixed Assets Turnover Ratio
(iii) Working Capital Turnover Ratio
(iv) Current Assets Turnover Ratio
(v) Total Assets Turnover Ratio.

6.2.4 Profitability Ratios

The purpose of calculating these ratios is to assess the adequacy of the profits earned by the company and also to estimate the trend of profitability over a period of time. Profitability of a company is the net result of numerous policies and decision. These ratios show the combined effect of capital budgeting, liquidity management, asset management on operating results. Profitability, ratios are measured with reference to sales, capital employed, total assets, shareholders funds etc. The major profitability ratios are as follows:

a) Return on Capital Employed (ROCE) or Return on Investment (ROI)
b) Earning Per Share (EPS)
c) Cash Earning Per Share (cash EPS)
d) Gross Profit Margin
e) Net profit Margin
f) Cash Profit Ratio
g) Return on Assets
h) Return on Net Worth (or Return on Shareholders Equity)
i) Operating Ratios.

a) **Return on Investment:** The aim of any business enterprise is to earn a return on capital employed. ROI is determined by dividing the net profit or income by the capital employed or investment made to achieve the profit.

$$\text{ROI} = \frac{Net\ Profit}{Capital\ Employed} \times 100$$

ROI consists of two components (i) Profit Margins (ii) Investment Turnover.

$$ROI = \frac{Net\ profit}{Sales} \times \frac{Sales}{Investment\ in\ assets}$$

(Profit Margin) (Investment Turnover)

ROI can be improved by increasing the profit margin and investment turnover or both. The capital employed is found out by adding the debt and equity components of the balance sheet viz., Share Capital (paid up), Reserves and Surplus and Loans (secured and unsecured), from this total subtract if any, (i) Capital Work in Progress (ii) Investment Outside the Business Activities (iii) Preliminary Expenses (iv) Debit Balance of P&L A/C.

ROI is a measure regarding optimal utilization of the assets of the company. This measure helps in selecting and disposing of assets as well as in selecting various investment proposals.

b) **Earnings Per Share (EPS):** One of the objectives of the firm/company is wealth/value maximization, of the stake of various stakeholders. The value is maximized when the market price of equity shares increases. The market price of equity shares is a function of the present and future earning potential of the firm. An appropriate and operationally feasible way to measure value maximization is to measure Earning Per Share (EPS).The EPS is one of the important measures of economic performance of an economic entity. A higher EPS among the comparable firms means better capital productivity.

$$EPS = \frac{Net\ profit\ after\ tax\ and\ preference dividend}{No.of\ equity\ shares}$$

1. EPS when debt and equity is used:

$$\frac{(EBIT - I)(I - T)}{N}$$

II. EPS when debt equity and preference shares are used:

$$\frac{(EBIT - I)(I - T) - D_p}{N}$$

Where EBIT = Earning before Interest and Taxes
I = Interest
T = Rate of Corporate Tax
Dp = Preference Dividend
N = Number of Equity Shares

c) **Cash Earning Per Share:** The cash earning per share is calculated by dividing the Net Profit + Depreciation by number of Equity Shares.

$$Cash\ EPS = \frac{Net\ Profit + Depreciation}{No.of\ Equity\ Shares}$$

d) **Gross Profit Margin:** The gross profit margin is calculated as follows:

$$= \frac{Sales - \cos t\ of\ goods\ sold}{sales} \times 100$$

$$or$$

$$= \frac{Gross\ profit}{Sales} \times 100$$

The gross profit measures, the excess of sales proceed over their cost before taking into consideration administration, selling, distribution and financing charges. This ratio measures, the efficiency of the company's operation. Under normal circumstances the gross profit margin should remain unchanged over a period of time irrespective of the level of production and sales, since it is based on the assumption that all cost deducted when computing gross profit are

directly variable with sales. Variation in gross profit margin may be due to the following reasons:

1) price cuts
2) cost increases
3) change in product mix
4) under or over valuation of stocks.

e) **Net Profit Margin:** This profit is calculated as follows:

$$\frac{Net\ profit\ before\ interest\ and\ tax}{Sales} \times 100$$

This ratio reflects net profit margin on the total sales after deducting all expenses but before deducting the interest and corporate tax. The non-operating incomes and expenses are ignored in computation of net profit before tax, depreciation and interest. This ratio is used to compare performance with that of the previous year as well as with the competitors.

f) **Cash Profit Ratio:** This ratio is computed as follows:

$$\frac{\text{Cash profit}}{\text{Sales}} \times 100$$

Where Cash Profit= Net Profit+ Depreciation

This ratio measures the cash generated by the company as a result of the operations expressed in terms of sales. In situations where the profit fluctuates from year to year, due to changes in tax rates and depreciation rates and policies, this ratio is a reliable indicator of performance. This ratio is not affected by the method of depreciation used to charge depreciation.

g) **Return on Assets:** This ratio is calculated as follows:

$$\frac{Net\ profit\ after\ tax}{Total\ assets} \times 100$$

This ratio establishes the relationships of profits with the total assets of the Organisation. This ratio indicates the efficiency of utilization of assets in generating revenue.

h) **Return on Equity Shareholders Funds or Return on Net Worth:**

$$\frac{Net\ profit\ after\ \ interest\ and\ tax}{Net\ worth} \times 100$$

Where Net Worth= Equity capital+reserves and surplus. This ratio shows how much money is returned to the owners as a percentage of the money they have invested in the company. The higher the percentage, the more money is being returned to investors.

6.2.5 Market Test Ratios

The market test ratio relates the firm's stock price to its earning and book value per share. These ratios are indicators of the performance of the company and also reflect the likely performance of the company in the near future. If the firm's profitability,

solvency and turnover ratios are good then the market test ratios will be high. The market test ratios are as follows:

a) Divided Payout Ratio
b) Dividend Yield
c) Book Value

a) **Dividend Payout Ratio:**

$$\frac{Dividend\ per\ share}{Earnings\ per\ shares}$$

Dividend payout ratio is the dividend per share divided by the earnings per share. Dividend payout ratio indicates the extent of the net profit distributed to the shareholders by way of dividend. A higher dividend payout ratio indicates that the company does not require further funds in the near future or it may also indicate that the cost of borrowing is less than the cost of equity. A low payout ratio is an indicator of the fact that company is in requirement of funds.

b) **Dividend Yield:**

$$\frac{Dividend\ per\ share}{Market\ price} \times 100$$

This ratio reflects the percentage yield earned by investors by investing in company's share at the current market price. This measure is specially useful for those investors who are interest in regular returns rather than capital appreciation.

c) **Book Value:**

$$\frac{Equity\ capital + Reserves - Profite\ Loss\ A/C\ debit\ balance}{Total\ number\ of\ equity\ shares}$$

This ratio indicates the net worth per equity share. Book Value is a function of the past earnings and distribution policy of the company.

☞ Check Your Progress 5

1. The capital of Sun Ltd. is as follows:

	Rs.
9% 30,000 Preference Shares of Rs. 10 each	3,00,000
80,000 Equity Shares of Rs. 10 each	8,00,000
	11,00,000

The following additional information has been obtained form the books of the company.

Profit after tax at 60% Rs. 2, 00,000; Depreciation Rs. 60,000; Equity Dividend Paid 20% Market Price of Equity Share Rs. 40.

You are required to calculate (i) Dividend Yield on Equity Share; (ii) Earnings Per Share; (iii) Price Earning Ratio, and (iv) Dividend Pay-out Ratio.

6.3 UTILITY OF RATIO ANALYSIS

The ratio analysis is one of the most widely used tools of financial analysis. The various stakeholders in the firm would be interested in the information relating to operating and financial efficiency. They would also be interested in knowing the growth prospect of the firm. The various stake holders use ratio to determine those financial characteristics of the firm in which they are interested. With the help of ratios, one can determine:

- the ability of the firm to service its current obligations;
- the effect of borrowings on long term solvency;
- the efficiency with which the firm is utilizing its assets in generating sales revenue; and
- the overall operating efficiency and performance of the firm.

Performance Analysis:

As stated above various stakeholders have different interests in the firm; short term creditors will be interested in the current financial position, while profitability long term creditors will be interested in the solvency of the firm. The equity holders are generally concerned with the returns. It is to be noted here that in every kind of financial analysis short-end long term financial position along with profitability are tested, but the emphasis would differ depending upon the interest of the stakeholder.

6.4 DIAGNOSTIC ROLE OF RATIOS

Profitability Analysis

1. How profitable is the company? What accounting policies and practices are followed by the company? Are they stable?
2. Is the profitability (RONA) of the company high/low average? What are the underlying reasons for current profitability? Is it due to:
    - Profit Margins
    - Asset Utilization
    - Non Operating Income
    - Window Dressing
    - Changes in Accounting Policy
    - Inflationary Conditions?
3. Is the return on equity (ROE) high/low/average? Is it due to:
    - return on investment
    - financing mix
    - Capitalization of reserves?

4. What is the trend of profitability? Is it improving because of better utilisation of resources or curtailment of expenses of strategic importance?

5. Will the company be able to sustain high profitability or improve the profitability given the competitive and other environment utilizations?

Asset Utilization

These types of ratios are basically used to gauge the effective utilization of assets. Here assets include, both fixed as well as current assets. Through calculating these ratios we try to find out:

1. How effectively assets are being utilized to generate sales?

2. Are the level of debtors and inventories relative to sales reasonable in view of the firm's competitive and operating characteristics?

3. What are the trends in collection periods, inventory turnover and fixed assets turnover?

3. Is the improvement in the fixed assets turnover due to

- Depreciated book value of fixed assets?
- Disposal of some fixed assets.

Liquidity Analysis

As already discussed these ratios are used to predict short term and long-term solvency of the firm. In addition to this these ratios are also used to analyse the following:

1. What is the level of current assets and liabilities? Is it reasonable in the context of the firm's business?

2. What is the frequency and duration of payment to the creditors? If it is high or low what is the effect of it?

3. How efficiently and frequently does the company convert it's current assets into cash?

4. Given the company's riskiness and future financial needs, what is the pattern of financing :

   - What is the mix of debt and equity?
   - What is the maturity structure of debt and is the company faced with large debt repayment in the near future?

5. What are the lease commitments of the firms and the quantum of contingent liabilities?

6.5 APPLICATION OF FORMULAS

Example 6.1: The following is the Trading and Profit and Loss A/C and Balance Sheet of a firm:

Trading and Profit and Loss Account

Particular	Rs.	Particular	Rs.
To Opening Stock	10,000	By Sales	1,00,000
To Purchases	55,000	By Closing Stock	15,000
To Gross Profit c/d	50,000		
	1,15,000		1,15,000
		By Gross Profit b/d	50,000
To Administration Expenses	15,000		
To Interest	3,000		
To Selling Expenses	12,000		
To Net Profit	20,000		
	50,000		50,000

Balance Sheet

Liabilities	Rs.	Assets	Rs.
Capital	1,00,000	Land and Buildings	50,000
Profit and Loss A/C	20,000	Plant and Machinery	30,000
Creditors	25,000	Stock	15,000
Bills Payable	15,000	Debtors	15,000
		Bills Receivable	12,500
		Cash at Bank	17,500
		Furniture	20,000
	1,60,000		1,60,000

Calculate the following ratios: (1) Inventory Turnover Ratio (2) Current Ratio (3) Gross Profit Ratio (4) Net Profit (5) Liquidity Ratio (6) Proprietary Ratio

Solution:

1. **Inventory Turnover Ratio** = $\frac{Cost\ of\ Goods\ Sold}{Average\ Stock}$

Cost of Goods Sold =

Opening Stock	10,000
Purchase	55,000
	65,000
Less: Closing Stock	15,000
	50,000

$$\frac{Opening\ Stock + ClosingStock}{2}$$

$$\frac{10,000 + 15,000}{2} = 12,500$$

$$\text{Inventory Turnover Ratio} = \frac{50,000}{12,500} = 4 \text{ times.}$$

2. **Current Ratio:**

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

Current Assets	Rs.	Current Liabilities	Rs.
Stock	15,000	Creditors	25,000
Debtors	15,000	Bills Payable	15,000
B/R	12,500		
Cash in Bank	17,500		40,000
	60,000		

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

3. **Gross Profit Ratio:**

$$\text{Gross Profit Ratio} = \frac{\textit{Gross Profit}}{\textit{Net Sales}} \times 100 = \frac{50,000}{1,00,000} \times 100 = 50\%$$

4. **Net Profit Ratio:**

$$\text{Net Profit Ratio} = \frac{\textit{Net Profit}}{\textit{Net Sales}} \times 100 = \frac{20,000}{1,00,000} \times 100 = 20\%$$

5. **Operating Profit:** $\dfrac{\textit{Cost of Goods sold} + \textit{Operating expenses}}{\textit{Net Sales}} \times 100$

Cost of Goods Sold = 50,000

Operating Expenses (Rs.)

Administration Expenses	15,000
Selling Expenses	12,000
	27,000

$$\text{Operating Ratio } \frac{50,000 + 27,000}{1,00,000} \times 100 = 77\%$$

6. **Liquidity ratio =** $\dfrac{\textit{Liquid Assets}}{\textit{Current Liabilities}}$

Liquid Assets	Rs.	Current Liabilities	Rs.
Cash in Bank	17,500	Creditors	25,000
Bills Receivable	12,500	Bills Payable	15,000
Debtors	15,000		40,000
	45,000		

Liquidity Ratio = $\frac{45,000}{40,000} = 1.125:1$

7. **Proprietary Ratio**

Proprietary Ratio = $\frac{Shareholder's\ funds}{Total\ Assets} \times 100$

Capital	1,00,000
Profit and Loss A/C	20,000
	1,20,000

Total Assets = Rs. 1, 60,000

Proprietary Ratio = $\frac{1,20,000}{1,60,000} \times 100 = 75\%$

Example 6.2: There are three companies in the country manufacturing a particular chemical. Following data are available for the year 2020-21.

Company	Net Sales	Operating Cost	Operating Assets
A Ltd.	300	255	125
B Ltd.	1,500	1,200	750
C Ltd.	1,400	1,050	1,250

Which is the best performer as per your assessment and why?

Solution:

Comparative statement of performance (Rs. Lakhs)

Particular	A Ltd.	B Ltd.	C Ltd.
Sales	300	1500	1,400
Less: Operating Cost	255	1200	1,050
Operating Profit (A)	45	300	350
Operating Assets (B)	125	750	1,250
Return on Capital Employed (A)/(B)×100	36%	40%	28%

Analysis: Basing on the return on capital employed, B Ltd. is the best performer in comparison to A Ltd. and C Ltd.

Example 6.3: Calculate the P/E ratio from the following:

Equity Share Capital (Rs.20 each)	50,00,000
Reserve and Surplus	5,00,000
Secured Loans at 15%	25,00,000
Insured Loans at 12.5%	10,00,000
Fixed Assets	30,00,000
Investments	5,00,000
Operating Profit	25,00,000

Income Tax Rate 50%. Market Price/Share Rs.50.

Solution:

(Rs.)

Operating Profit		**25,00,000**
Less: Interest on Secured Loans @ 15%	3,75,000 1,25,000	5,00,000

Unsecured Loans @ 12.5%		20,00,000
Profit Before Tax (PBT)		10,00,000
Less: Income-Tax @ 50%		
Profit After Tax (PAT)		10,00,000

$$\text{Number of Equity Shares} = \frac{50,00,000}{20} = 2,50,000$$

$$\text{Earning as Per Share (EPS)} = \frac{\textit{Profit after tax}}{\textit{No.of equity Shares}} = \frac{Rs.10,00000}{Rs.2,50,000} = Rs.4$$

Price Per Share = Rs.50.
P/E ratio = Market Price Per Share/EPS = Rs.50/Rs.4
= 12.50

Example 6.4: Profit and Loss Account of Happy Ltd.for the year ended 31st March 2021.

	Rs.		Rs.
To Opening stock	90,000	By Sales	9,00,000
To Purchases	5,60,000	By Closing Stock	90,000
To Wages	2,14,000		
To Gross Profit	1,26,000		9,90,000
	9,90,000		
To Salaries	16,000	By Gross Profit	1,26,000
To Electricity	10,000		
To Miscellaneous Expenses	10,000		
To Depreciation	30,000		
To Net profit	60,000		
	1,26,000		1,26,000

Balance Sheet of Happy Ltd. As on 31st March, 2021

Liabilities			Rs
			1,80,000
Equity Share Capital			1,20,000
Reserves and Surplus			2,10,000
Secured Loans			90,000
Creditors		Total:	**6,00,000**
Assets			
Fixed Assets	5,40,000		3,90,000
Less: Depreciation	1,50,000		
Stock			90,000
Debtors			1,05,000
Cash			15,000
			6,00,000

Discuss under the following important functional grouping the usual ratios and comment on the financial strength and weakness: (i) Liquidity and Solvency Ratios; and (ii) Profitability Test Ratios.

Solution:

a) Liquidity Ratios

1. $$\text{Current Ratio} = \left[\frac{\textit{Current Assets}}{\textit{Current Liabilities}}\right] = \frac{2,10,000}{90,000} = 2.3$$

2. $$\text{Acid test Ratio} = \left[\frac{\textit{Liquid Assets}}{\textit{Current Liabilities}}\right] = \frac{1,20,000}{90,000} = 1.3$$

b) Solvency Ratios

1. $$\text{Debt} - \text{Equity Ratio} = \left[\frac{\textit{Debt}}{\textit{Equity}}\right] = \frac{2,10,000}{3,00,000} = 0.7$$

2. $$\text{Fixed Assets Ratio} = \left[\frac{\textit{Fixed Assets}}{\textit{Long term funds}}\right] = \frac{3,90,000}{5,10,000} = 0.76$$

c) Profitability Test Ratios

1. $$\text{Gross Profit Ratio} = \left[\frac{\textit{Gross Profit}}{\textit{Sales}} \times 100\right] = \frac{1,26,000}{9,00,000} = 14\%$$

2. $$\text{Net Profit Ratio} = \left[\frac{\textit{Net Profit}}{\textit{sales}} \times 100\right] = \frac{60,000}{9,00,000} \times 100 = 6.7\%$$

$$\text{Return on Capital employed} = \left[\frac{\textit{Net Profit}}{\textit{Capital Employed}} \times 100\right] = \frac{60,000}{5,10,000} \times 100 = 11.7\%$$

Analysis

1. The current and acid test ratios are satisfactory. Since they are above the ideal standards of 2:1 and 1:1 respectively.

2. The debt equity ratio is marginally higher than the ideal standard of 2:1. However, the debt-equity ratio fixed assets ratios reflect a satisfactory position of the company.

3. The Gross Profit Ratio and Net Profit Ratio and Return on Capital Employed is not impressive and effort needs to be made to improve the profitability of the Company.

Example 6.5: The summarized Balance Sheet of M/s Ram Shyam. Traders Ltd. for the year 31.3.2021 is given below:

(Rs. in Lakh)

Capital and Liabilities		**Assets**		
Equity Share Capital (fully paid-up)	140	Fixed Asset (at cost)	210	
		Less: Depreciation	25	185
Reserves and Surplus	45	Current Assets:		
Profit and Loss Account	20	Stock	25	
Provision for Taxation	10	Debtors	30	70
Sundry Creditors	40	Cash	15	
Total:	**255**	Total:		**255**

The following further particulars are also given for the year:

(Rs. in lakhs)

Sales	120
Earnings Before Interest and Tax (EBIT)	30
Net Profit After Tax (PAT)	20

Calculate the following for the company and explain the significance of each in one or two sentences:

(i) Current Ratio; (ii) Liquidity Ratio; (iii) Profitability Ratio; (iv) Profitability on Funds Employed; (v) Debtors' Turnover Ratio; (vi) Stock Turnover Ratio; (vii) Average Collection Period; (viii) Return on Equity.

Solution:

(i) Current Ratio

(Rs. Lakhs)

Current Assets	
Stock	25
Debtors	30
Cash	15
Total	70
Current Liabilities	40

$$= \left[\frac{Current\ Assets}{Current\ Liabilities}\right] = \left[\frac{70}{40}\right] = 1.75:1$$

This ratio indicates the financial position of firm in meeting current liabilities out of current assets. The prudential norm is 2:1.

(ii)

$$\text{Liquidity Ratio} = \left[\frac{quick\ assets}{Current\ liabilities}\right] = \left[\frac{Current\ assets - Stock}{Current\ liabilities}\right] = \left[\frac{70-25}{40}\right] = 1$$

Liquidity ratio indicates the liquidity position of the company in meeting its current liabilities out of the liquid assets. The prudential norm is 1:1

(iii)

$$\text{Profitablitiy Ratio} = \left[\frac{EBIT}{Sales} \times 100\right] = \frac{30}{120} \times 100 = 25\%$$

This ratio indicates the margin of profit made on sales.

(iv) Profitability on funds employed:

$$= \left[\frac{EBIT}{Share\ capital\ and\ longterm\ loan} \times 100 \right] = \frac{30}{205} \times 100 = 14.64\%$$

This ratio indicates the margin of profit made on sales.

$$\text{(v) Debtor's turnover} = \left[\frac{Sales}{Average\ Debtors} \right] \frac{120}{30} = 4 \text{ times}$$

It indicates the speed in conversion of debtors into cash.

vi) Stock Turnover Ratio = $\left[\frac{Sales}{Average\ Stock} \right] = \frac{120}{25} = 4.8 \text{ times}$

It indicates the number of times the stock is converted into sales.

$$\text{(vii) Average collection period} = \left[\frac{Average\ Debtors}{Credit\ sales} \times 12 \right] = \frac{30}{120} \times 12 = 3\ months$$

This ratio indicates the average credit period allowed to the customers.

$$\text{(viii) Return on equity} = \left[\frac{PAT}{Shareholder's\ funds} \times 100 \right] = \frac{20}{205} \times 100 = 9.76\%.$$

This ratio indicates the percentage profit after tax earned on shareholders funds.

Example 6.6: The Profit and loss Account and Balance Sheet of XYZ Ltd. are as under:

Profit and Loss Account for the year ended 31st December, 2021.

Net Sales		3,00,000
Less: Cost of Production		2,58,000
		42,000
Less: Operating Expenses:		
Selling	2,200	
General Administration	4,000	
Rent of Office	2,800	9,000
Gross Operating Profit		33,000
Less: Depreciation		10,000
		23,000
Net-Operating Profit		1,500
Other Income (Interest on Government Securities)		
Gross Income (Before Tax)		24,500
Less: Other Expenses:		
Interest on Bank Overdraft	300	
Interest on Debentures	4,200	4,500
Net Income (Before Tax)		20,000
Tax 50% on net income		10,000
Net Income (After Tax)		10,000

Balance Sheet as at 31st December, 2021

(Rs.)

Liabilities		
Equity Share Capital		50,000
7% Preference Share Capital		10,000
Reserves and Surplus		40,000
6% Mortgage Debentures		70,000
Creditors		6,000
Bills Payable		10,000
Outstanding Expenses		1,000
Provision for Taxation		13,000
		2,00,000
Assets		
Fixed Assets	1,80,000	1,30,000
Less: Depreciation	50,000	
		15,000
Investment in Government securities		
Debtors		20,000
Stock		30,000
Cash		5,000
		2,00,000

You are required to calculate the following ratios: (i) Return on Investment; (ii) Net Profit Ratio; (iii) Current Ratio; (iv) Net Worth to Capital Employed; (v) Cost of Production to Capital Employed.

Solution:

(i) Return on Investment

$$\frac{Net\ Operating\ Profit \times 100}{Capital\ employed} = \frac{Rs.22,700 \times 100}{Rs.1,55,000} = 14.65\%$$

Operating Profit = Net profit before non-operating income but after Interest on bank overdrafts

Capital Employed = Net fixed Assets+Current Assets-Current Liabilities

Alternatively,

Return on Investment =

$$\frac{Net\ Profit\ (before\ interest\ and\ tax) \times 100}{Capital\ employed} = \frac{Rs.24,200 \times 100}{Rs.1,70,000} = 14.24\%$$

Tax and profit includes income from interest on Government Securities (less interest on bank overdrafts) and capital employed covers investment n government securities also.

(ii) **Net Profit Ratio:**

$$\frac{Net\ Profit\ (after\ tax) \times 100}{Net\ Sales} = \frac{\text{Rs.}10,000 \times 100}{\text{Rs.}3,00,000} = 3.33\%$$

$$Alternatively, \frac{Net\ Operating\ Profit \times 100}{Net\ Sales} = \frac{\text{Rs.}23,000 \times 100}{\text{Rs.}3,00,000} = 7.67\%$$

(iii) **Current Ratio:**

$$\frac{Current\ Assets}{Current\ Liabilities} = \frac{\text{Rs.}55,000}{\text{Rs.}30,000} = 1.83:1$$

$$\text{or} = \frac{\text{Rs.}70,000}{30,000} = 2.33:1$$

(Current Assets inclusive of Investment in Government Securities)

(iv) **Net Worth to Capital Employed:**

$$\frac{Net\ Worth}{Capital\ Employed} = \frac{\text{Rs.}1,00,000}{\text{Rs.}1,70,000} = 58.32\%$$

$$\text{or} = \frac{\text{Rs.}1,00,000 \times 100}{\text{Rs.}1,55,000} = 64.52\%$$

(v) **Cost of Production to Capital Employed**

$$= \frac{Current\ of\ Production \times 100}{Capital\ Employed} = \frac{\text{Rs.}2,58,000 \times 100}{\text{Rs.}1,70,000} = 151.76\%$$

$$\text{or} = \frac{\text{Rs.}2,58,000 \times 100}{\text{Rs.}1,55,000} = 166.45\%$$

Example 6.7: From the Final Accounts of Product Ltd. Given below, calculate the following:

(i) Gross Profit Ratio (ii) Current Ratio, (iii) Liquid Ratio; and (iv) Return on Investment Ratio.

Trading and Profit and Loss Account for the year ended 31st March, 2021

		Rs.		Rs.
To Material Consumed			By Sales	85,000
Opening Stock	9,050		By Profit	600
Purchase	54,525		By Interest on	300
	63,575		Investment	
Less: Closing stock	14,000			
		49,575		
To Carriage Inwards		1,425		
To Office Expenses		15,000		
To Sales Expenses		3,000		
To Financial Expenses		1,500		
To Loss on Sales of Tired Assets		400		
To Net Profit		15,000		
		85,900		85,900

Balance Sheet as on 31st March, 2021

Liabilities		Rs.	**Assets**		Rs.
Share Capital 2,000 Equity		20,000	Fixed Assets:		
Shares of Rs. 10 each, fully paid			Buildings	15,000	
General Reserve		9,000	Plant	8,000	23,000
Profit and Loss Account		6,000	Current Assets:		
Bank Overdraft		3,000	Stock-in-trade	14,000	
Sundry Creditors			Debtors	7,000	
			Bills Receivable	1,000	25,000
For Expenses	2,000		Bank Balance	3,000	48,000
For Others	8,000	10,000			
		48,000			

Solution:

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

		Rs.
Sales		85,000
Less: Material Consumption	49,575	
Carriage Inwards	1,425	51,000
		34,000

$$\text{Gross Profit Ratio} = \frac{\text{Rs.}34{,}000}{\text{Rs.}85{,}000} \times 100 = 40\%$$

Stock	14,000
Debtors	7,000
Bills Receivable	1,000
Bank	3,000
Current Assets	25,000

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

	Rs.
Sundry Creditors	10,000
Bank Overdraft	3,000
Current Liabilities	13,000

$$\text{Current Ratio} = \frac{\text{Rs.}25{,}000}{\text{Rs.}13{,}000} = 1.92:1$$

Calculation of Liquid Ratio

Liquid Ratio =

$$\frac{\text{Liquid Assets}}{\text{Current Liabilities}} = \frac{\textit{Current Assets} - \textit{Stock}}{\textit{Current Liabilities}} = \frac{\text{Rs.}25{,}000 - \text{Rs.}14{,}000}{\text{Rs.}13{,}000} = 0.84:1$$

$$\text{Return on Investment} = \frac{\textit{Operating Profit}}{\textit{Capital Employed}} \times 100$$

		Rs.
Net Profit		15,000
Add: Loss on Sale of Fixed Assets		400
Financial Charges		1,500
		16,900
Less: Interest on Investment	300	
Profit (non-operating)	600	
Operating Profit		900
		16,000

	Rs.
Share Capital	20,000
General Reserve	9,000
Profit & Loss A/c	6,000
Capital Employed	35,000

$$\text{Return on Investment} = \frac{\text{Rs.}16{,}000}{\text{Rs.}35{,}000} \times 100 = 45.71\%$$

Example 6.8: The following data has been extracted from the annual accounts of a company:

	(Rs. in lakhs)
Share Capital Divided into 20,00,000 Equity Shares of Rs. 10 each	200.00
General Reserve	150.00
Investment Allowance Reserve	50.00
15% Long Term Loan	300.00
Profit Before Tax	140.00
Provision for Taxation	84.00

Proposed Dividends	10.00

From the details given above calculate the following: (i) Return on Capital Employed; (ii) Return on Net Worth.

Solution:

(a) Calculation of Capital Employed

Share Capital	200
General Reserve	150
Investment Allowance Reserve	50
15% Long Term Loan	300
Capital Employed	700

(b) Calculation of Return

Profit before Tax	140
Add: 15% Interest on Long Term Loan	45
Return	185

(c) Calculation of Net Worth

Share Capital	200
General Reserve	150
Investment Allowance	50
Reserve	400

(d) Return on Shareholders' Fund

Profit before Taxation	140
Less: Provision for Taxation	84
Return	56

On the basis of the above the following ratios have been calculated:

(i) Return on Capital Employed =

$$\frac{Return}{Capital\ Employed} \times 100 = \frac{185 \times 100}{700} = 26.4\%$$

(ii) Return on Net Worth =

$$\frac{Return\ on\ shareholders\ funds}{Net\ worth} \times 100 = \frac{56 \times 100}{400} = 14\%$$

Example 6.9: From the following final accounts of XYZ Ltd. For the year ended 31st March 2021, you are required to calculate the following: (i) Acid Test Ratio; (ii) Stock Turnover Ratio.

Balance sheet as on 31st March 2021

Liabilities	Rs.	**Assets**	Rs.
Share Capital (in shares of Rs. 10 each	5,00,000	Land and Buildings	5,00,000
		Plant and Machinery	2,00,000
General Reserve	4,00,000	Stock	1,50,000
Profit and Loss A/c	1,50,000	Sundry Debtors	2,50,000

Sundry Creditors	2,00,000	Cash and Bank Balance	1,50,000
	12,50,000		12,50,000

Profit and Loss account for the year ended 31st March, 2021

Opening Stock	2,50,000		
Purchases	10,50,000	Sales	18,00000
Gross Profit c/d	6,50,000	Closing Stock	1,50,000
	19,50,000		19,50,000
Admn. Expenses	2,30,000		6,50,000
Selling and Distribution Expenses	1,00,000		50,000
		Gross Profit b/d	7,00,000
Expenses of Financing	20,000	Other Income (misc.)	
	3,50,000		
Net Profit	7,00,000		

Solution:

Working Notes:

(i) **Cost of Goods Sold** = (Opening Stock + Purchases – Closing Stock)

= Rs. 2,50,000+10,50,000 – Rs. 1,50,000 = Rs. 11,50,000

or

= Sales-Gross profit = Rs. 18, 00,000-Rs 6, 50,000 = Rs.11, 50,000

(ii) Operating Expenses = Administrative Exp. + Selling and Distribution Exp.

= Rs. 2, 30,000+Rs. 1, 00,000 = 2, 30,000

(iii) Statement of Capital Employed

Share Capital	5,00,000
General Reserve	4,00,000
Profit and Loss A/c	1,50,000
Shareholders' Funds	10,50,000

(iv) Average Stock =

$$\frac{Opening\ Stock + Closing\ Stock}{2} = \frac{\text{Rs.}2{,}50{,}000 + \text{Rs.}1{,}50{,}000}{2} = \text{Rs.}2{,}00{,}000$$

Calculation of Ratios

(i) Acid Test Ratio = $\frac{Liquid\ Assets}{Current\ Liabilities} = \frac{Rs.4{,}00{,}000}{Rs.2{,}00{,}000} = 2:1$

(ii) Stock Turnover Ratio =

$$\frac{Cost\ of\ Goods\ Sold}{Average\ Stock\ at\ Cost} = \frac{Rs.11{,}50{,}000}{Rs.2{,}00{,}000} = 5.75\ times$$

(iii) Fixed Assets to Net Worth Ratio $= \frac{1,40,000}{90,000} = 1.55:1$

Example 6.10: From the following data: (a) Current Ratio (b) Quick Ratio (c) Stock Turnover Ratio (d) Operating Ratio (e) Rate of Return on Equity Capital.

Balance Sheet as on December 31, 20021

Liabilities	Rs.	**Assets**	Rs.
Equity Share Capital (Rs. 10 shares)	10,00,000	Plant and Machinery	6,40,000
		Land and Buildings	80,000
Profit and Loss Account	3,68,000	Cash	1,60,000
Creditors	1,04,000	Debtors	
Bills Payable	2,00,000	**Less**: Provision for Bad Debts	3,20,000
			4,80,000
Other Current Liabilities	20,000	Stock Prepaid Insurance	12,000
	16,92,000		16,92,000

Income Statement for the year ending 31st December 2021

(Rs.)

Sales	40,00,000
Less: Cost of good	30,80,000
	9,20,000
Less: Operating expenses	6,80,000
Net Profit	2,40,000
Less: Income tax paid 50%	1,20,000
Net Profit after Tax	1,20,000

Solution:

Balance at the beginning of the year:

Debtors Rs. 3, 00,000
Stock Rs. 4, 00,000

(a) Current Ratio $= \frac{Current\ Assets}{Current\ Liabilities}$

Current Assets	Rs.	Current Liabilities	Rs.
Cash	1,60,000	Creditors	1,04,000
Debtors	3,20,000	Bills Payable	2,00,000
Stock	4,80,000	Other Current Liabilities	20,000
Prepaid Insurance	12,000		3,24,000
	9,72,000		

Current Ratio $= \frac{9,72,000}{3,24,000} = 3:1$

(b) Quick Ratio

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

Liquid assets

	Rs.
Cash	1,60,000
Debtors	3,20,000
	4,80,000

Liquid Ratio = $\frac{4,80,000}{3,24,000} = 1.48:1$

(c) Stock Turnover Ratio = $\frac{Cost\ of\ goods\ sold}{Average\ stock}$

Cost of Goods Sold = 30, 80,000

Average Stock = $\frac{Opening\ Stock + Closing\ Stock}{2} = \frac{4,00,000 + 4,80,000}{2} = 4,40,000$

Stock Turnover ratio = $\frac{30,80,000}{4,40,000} = 7\ times$

(d) Operating Ratio =

$$\frac{Cost\ of\ goods\ sold + Operating\ expenses}{Net\ Sales} \times 100 = \frac{30,80,000 + 6,80,000}{40,00,000} \times 100 = 94\%$$

(e) Rate of Return on Equity Capital

$$\frac{Net\ Profit\ after\ Tax}{Equity\ Share\ Capital} \times 100 = \frac{1,20,000}{10,00,000} \times 100 = 12\%$$

Example 6.11 The capital of Growfast Co. Ltd. is as follows:

Preference shares of Rs.10 each	50,00,000
Equity share Rs. 100 each	70,00,000
	1,20,00,000

Additional Information:

Profit after tax at 50%	Rs. 15, 00,000	Equity dividend paid	10%
Depreciation	Rs. 6, 00,000	Market price per equity share	Rs.200

Calculation the following: (i) The cover for the preference and equity dividends;
(ii) The Earnings Per Share; (iii) The Price Earnings Ratio; (iv) The Net Funds Flow.

Solution:

(1) Cover for the Preference and Equity dividends

$$\frac{Profit\ after\ tax}{Preference\ dividend + Equity\ dividend} = \frac{Rs.15,00,000}{Rs.5,00,000 + Rs.7,00,000} = 1.25\ Times$$

(ii) Earning Per Share

$$\frac{\text{Net Profit after Preference dividend}}{\text{Number of equity shares}} = \frac{\text{Rs.15,00,000} - \text{Rs.5,00,000}}{70{,}000} = \text{Rs.14.29}$$

(iii) Price Earnings Ratio

$$\frac{\text{Market Price per share}}{\text{Earning per share}} = \frac{\text{Rs.200}}{\text{Rs.14.29}} = 14\,\text{Times}$$

(iv) The Net Funds Flow:

Profit after Tax	**15, 00,000**
Add: Depreciation	6, 00,000
	21, 00,000

6.6 SUMMARY

A large number of ratios are used to measure performance and exercise control. The ratios are used by all the stakeholders of the business viz., owners, managers, creditors, bankers, suppliers, government etc. The ratios are basically divided into five categories. The short and long term solvency ratios are used to judge the ability of the firm to meet its financial obligations. Activity or turnover ratios are used to find out how effectively and efficiently the firm's resources are being used. Profitability ratios are used to gauge the profitability of the firm with reference to sales and assets. The market test ratios are used to gauge the firm performance in terms of share prices and dividends.

Liquidity Ratios:

Current Ratio	$\frac{\text{Current Assets}}{\text{Current Liabilities}}$
Quick Ratio	$\frac{\text{Current Assets} - \text{Inventory}}{\text{Current Liabilities}}$
Interval Measure	$\frac{\text{Current Assets} - \text{Inventory}}{\text{Average daily cash operating expenses}}$

Leverage Ratios:

Total Debt Ratio	$\frac{\text{Total debt}}{\text{Capital employed}}$
Debt-Equity Ratio	$\frac{\text{Net worth}}{\text{Total debt}}$
Capital-Equity Ratio	$\frac{\text{Capital employed or net assets}}{\text{Net Worth}}$
Interest Coverage	$\frac{\text{EBIDTA}}{\text{Interest}}$

Activity Ratios:

Inventory Turnover	$\frac{Cost\ of\ goods\ sold\ or\ sales}{Inventory}$
No. of days, inventory	$\frac{360}{Inventory\ turnover}$
Debtors Turnover	$\frac{Credits\ sales\ or\ Sales}{Debtors}$
Collection period	$\frac{360}{Debtors\ turnover}$
Assets Turnover	$\frac{Sales}{Net\ assets\ or\ capital\ employd}$
Working Capital Turnover	$\frac{Sales}{Net\ working\ capital}$

Profitability Ratios:

Gross Margin	$\frac{Gross\ profit}{Sales}\ or\ \frac{EBIT}{Sales}$
Net Margin	$\frac{Profit\ after\ tax}{Sales}\ or\ \frac{EBIT\ (1-T)}{Sales}$
PAT to EBIT Ratio	$\frac{PAT}{EBIT}$
Return on Investment (ROI) before tax	$\frac{EBIT}{Net\ assets\ or\ capital\ employed}$
Return on Investment (ROI) after tax	$\frac{EBIT\ (1-Tax\ rate)}{Net\ assets\ or\ capital\ employd}$
Return on Investment (ROI) before tax	$\frac{EBIDTA}{Total\ assets\ or\ Net\ assets}$
Return on Equity (ROE)	$\frac{Profit\ after\ tax}{Net\ worth}$

There exists a relationship between various ratios. For example, ROE can be expressed as follows:

ROE	$\frac{\text{Sales}}{\text{Net assets}} \times \frac{\text{EBIT}}{\text{Sales}} \times \frac{\text{PAT}}{\text{EBIT}} \times \frac{\text{Net assets}}{\text{Net Worth}}$

In practice companies calculate many other ratios. Most important ratios include:

EPS	$\frac{\text{PAT}}{\text{No. of shares}}$
DPS	$\frac{\text{Profit distributed}}{\text{No. of shares}}$
Payout	$\frac{\text{DPS}}{\text{EPS}}$
Price-Earnings Ratio	$\frac{\text{Market value of share}}{\text{EPS}}$
Market value-book value ratio	$\frac{\text{Market value of share}}{\text{Book value of share}}$

6.7 SELF-ASSESSMENT QUESTIONS/EXERCISES

1. What are the different types of financial ratios?
2. Discuss the importance of liquidity ratios?
3. Define and evaluate various leverage ratios?
4. Discuss the important turnover ratios.
5. Explain the important profit margin ratios?
6. Compare the following: rate of return ratios, return on total assets ratios, and returns on equity?
7. Discuss key valuation ratios?
8. If the market price per share is equal to the book value per share, the following are equal, return on equity, price earning ratio, and total yield. Prove.
9. Write short notes on 'Debt Service Coverage Ratio'.
10. Explain proprietary ratio.
11. 'Ratios are indicators – sometimes pointers but not in themselves powerful tools of management'. Explain.
12. Ratio analysis is only a technique for making judgments and not a substitute for judgments. Examine.
13. Write short notes on (i) Return on investments
    (ii) Pay-out Ratio.
14. Explain the limitations of ratio analysis for evaluating investment proposals and liquidity analysis.
15. Ratios are symptoms like blood pressures, the, pulse or the temperature of an individual'. Explain, also name and explain in brief the ratios made use to judge the long-term solvency of a concern.

16. Write short notes on 'Earnings per share'.

17. Distinguish between Operating Ratios and Turnover Ratio.

18. Ratio analysis is an important tool for judgment of the health of any organisation. Elaborate.

19. Write notes on uses and limitations of 'Ratio Analysis'.

PROBLEMS

1. Premier Company's net margin is 5 per cent. The total return assets turnover ratio is 1.5 times, debt to total assets ratios is 0.7. What is the return on equity for premier?

2. McGill Inc. has a profit before tax of Rs.40 ml. If the company's times interest covered ratio is 6? What is the total interest charge?

3. The following data applies to a firm.

Interest Charges	Rs. 150,000
Sales	Rs. 7,000,000
Tax Rate	60 per cent
Net Profit Margin	6 per cent

What is the firm's times covered ratio?

4. A firm's current assets and current liabilities are 600 and 1,500 respectively. How much can it borrow from a bank without reducing the current ratio given below 1.5? Justify.

5. A firm has a total annual sales of 1,000,000 and accounts receivable is collected if management want to reducing the accounts receivable to 12,0 0,000?

6. Determine the sales of a firm with the following financial data:

Current Ratio	1.5
Acid-test Ratio	1.2
Current Liabilities	800,000
Inventory Turn Over Ratio	times

7. Complete the balance sheet and sales data (fill in the blanks) using the following financial data:

Debt/Equity Ratio	0.60
Acid-Test Ratio	12
Total Assets Turnover Ratio	15
Day's Sales Outstanding in Account Receivable	40 days
Gross Profit Margin	20 per cent
Inventory Turnover	5

Balance Sheet

Equity Capital	50,000	Plant and Equipment
Retained Earning	60,000	Inventories
		Account Receivable Cash

8. The 19X0-balance sheet and income statement for Omex limited is given below. Compute the financial ratios for Omex. Evaluate Omex performance with reference to the standards. Balance Sheet of Omex limited as on 31December 2021

Liabilities and Equity

	Rs.
Equity Capital	10,000, 000
Reserves and Surplus	22,500,000
Long Term Debt	12,500,000
Short Term Bank Borrowing	15,000,000
Trade Creditors	10,000,000
Provision	5,000,000
Total	**75,000,000**

	Rs.
Assets Fixed Assets (net)	30, 000,000
Current Assets	
Cash in bank	5,000,000
Receivable	15,000,000
Inventories	20,000,000
Pre Paid Expenses	2,500,000
Other	2,500,000
Total	**75,000,000**

Income Statement of Omex limited for the year Ended December 31, 2021

	Rs.
Net Sales	95,000,000
Cost of Goods Sold	72,000,000
Gross Profit	23,000,000
Operating Expenses	10,000,000
Operating Profit	12,500,000
Non- Operating Surplus	2,600,000
Profit Before Interest and Tax	15,100,000
Interest	5,000,000
Profit before Tax	10,100,000
Tax	5,000,000
Profit After Tax	5,100,000
Dividends	1,600,000
Retained Earnings	3,300,000

Omex	**Standard**
Current Ratio	1.5
Acid-test Ratio	0.80
Debt-Equity Ratio	1.5
Times Interested Covered Ratio	3.5
Inventory Turnover Ratio	4.0
Average Collection Period	60 days
Total Assets Turnover Ratio	1.0
Net Profit Margin Ratio	6%
Earning Power	10%
Return on Equity	12%

6.8 SOLUTIONS/ANSWERS TO CHECK YOUR PROGRESS

☞ Check Your Progress 1

1.

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

$= \frac{Rs.87,190}{Rs.22,500} = 3.88:1$

Current Assets = Cash at Bank + Trade Debtors +Stock

= Rs. 26,020 + Rs. 11,710 + Rs. 49,460

= Rs. 87,190

Current Liabilities = Creditors + Bills Payable

= Rs. 16,000 + Rs. 6,500 = Rs. 22, 500

ii) Liquidity Ratio = $\frac{Current\ Assets}{Current\ Liabilities}$

$= \frac{Rs.37,730 (Rs.26,020 + 11,710)}{Rs.22,500} = 1.68:1$

iii) Debt-Equity Ratio = $\frac{Total\ Debts}{Shareholders'\ Funds}$

$\frac{Rs.1,22,500}{Rs.1,84,500} = 0.66:1$

Total Debts = Debentures +Current Liabilities

= Rs. 1, 00,000+Rs. 22,500 = Rs. 1, 22,500

Shareholders' Funds = Rs. 1, 00,000+Rs. 84,500 = Rs. 1, 84,500

(iv) Proprietary Ratio = $\frac{Proprietory\ Funds}{Total\ Assets}$

$\frac{Rs.1,84,500}{Rs.13,07,000} = 0.6:1$

(v) Solvency Ratio = $\frac{Total\ Debts}{Total\ Assets}$

$= \frac{Rs.1,22,500}{Rs.3,07,000} = 0.4:1$

2. i) Capital Gearing Ratio = $\frac{Variable\ Cost\ bearing\ Capital}{Fixed\ Cost\ bearing\ Capital}$

$$= \frac{Rs.65,000}{Rs.1,00,000} = 65:1$$ It is High Gearing

Variable Cost Bearing Capital

= Equity Capital + Capital Reserve + P. & L. A/c.

= Rs. 50,000 + Rs. 10, 000 + Rs. 5,000 = Rs. 65,000

Fixed Cost Bearing Capital

= 2% Pref. Capital + 15% Debentures

= Rs. 30,000 + Rs. 70,000 = Rs. 1, 00,000

ii) Liquidity Ratio = $\frac{Liquid\ Assets}{Current\ Liabilities}$

$$= \frac{Rs.30,000}{Rs.25,000} = 1.2:1$$

Liquid Assets = Debtors + Bank

= Rs. 16,000 + Rs. 14,000 = Rs. 30,000

Current Liabilities = Creditors + Overdraft + Proposed Dividend

= Rs. 12,000 + Rs. 8,000 + Rs. 5000

= Rs. 25,000

(iii) Fixed Assets Ratio = $\frac{Long\ term\ Funds}{Fixed\ Assets}$

$$= \frac{Rs.1,65,500}{Rs.1,40,000} = 1.18:1$$

3.

i) Interest Coverage Ratio or Debt Service Ratio

$$= \frac{Net\ Profit\ before\ Interest\ and\ Tax}{Fixed\ Interest\ Charges}$$

$$\frac{Rs.1,56,370 + Rs.1,56,370 + 14,750}{Rs.14,750}$$

$$\frac{Rs.3,27,490}{Rs.14,750} = 22\ times\ (Approx.)$$

ii) Debt to Cash Flow Coverage Ratio

$$\frac{\text{Annual Cash Flow Before Interest and Tax}}{\text{Interest} + \frac{\text{Sinking Fund Appropriations}}{1 - \text{Tax Rate}}}$$

$$= \frac{\text{Rs.}1,56,370 + \text{Rs.}1,56,370 + \text{Rs.}14,750 + \text{Rs.}\,20,000}{\text{Rs.}14,750 + \frac{12,500}{1.50}}$$

$$= \frac{\text{Rs.}\,3,47,490}{\text{Rs.}\,37,750} = 8.\,\text{times (Approx)}$$

☞ Check Your Progress 2

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

$$= \frac{\text{Rs.}36,000 + 27,000 + 6,840 + 2,160}{\text{Rs.}\,70,200 + 1,800}$$

$$= \frac{\text{Rs.}\,72,000}{\text{Rs.}\,72,000} = 1:1$$

ii) Liquidity = $\frac{\text{Liquid or Quick Assets}}{\text{Current Liabilities}}$

Or

Quick Ratio or

$$\frac{\text{Current Assets} - (\text{Stock} + \text{Prepaid Exp})}{\text{Current Liabilities}}$$

$$= \frac{\text{Rs.}\,72,000 - (\text{Rs.}\,36,000 + \text{Rs.}\,2,160)}{\text{Rs.}\,72,000}$$

$$= \frac{\text{Rs.}\,33,840}{\text{Rs.}\,72,000} = 0.47:1$$

☞ Check Your Progress 3

1.

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

$$= \frac{\text{Rs.}41,520}{\text{Rs.}15,160} = 2.74 \text{ times}$$

Cost Goods Sold = Opening Stock + Purchases + Carriage Inward − Closing Stock

= Rs. 15,920 + 39,000 + 4,000-14,400

= Rs. 44,520

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

$$= \frac{\text{Rs.}15,920 + \text{Rs.}14,400}{2}$$

$$= \frac{\text{Rs.}30,320}{2} = \text{Rs. } 15,160$$

$$\text{Average Number of days to Turnover} = \frac{\textit{Day in a year}}{\textit{Inventory Turnover}}$$

Or

$$\text{Stock Velocity} = \frac{365}{2.74} = 133.21 \text{ or } 133 \text{ days}$$

2.

$$\text{Average Collection Period} = \frac{\textit{Account Collection Periods}}{\textit{Net Credit Sales}} \times 365$$

$$= \frac{\textit{Rs.}16,500 \text{X} 365}{\textit{Rs.}1,09,500}$$

$$= 55 \text{ days}$$

or

$$\text{Average Collection Period} = \frac{365}{\textit{Debtors Turnover}}$$

$$= \frac{365}{6.64} = 55 \text{ days}$$

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

$$= \frac{\textit{Rs.}1,09,500}{16,500} = 6.64 \text{ times}$$

(i) Calculation of Accounts Receivables:

= Debtors + Bills Receivable

= Rs. 13,500 + 3,000= Rs. 16,500

(ii) Calculation of Net Credit Sales:

= Total Gross Sales – Cash Sales- Sales Returns

Rs. 1, 50,000- 30,000-10,500= Rs. 1, 09,500

3.

$$\text{Creditors Turnover} = \frac{\textit{Net Credit Purchases}}{\textit{Total Payable}(Crs. + B/P)}$$

$$= \frac{\textit{Rs.}7,30,000}{\textit{Rs.}1,40,000}$$

$$= \frac{73}{14} = 5.21 \text{ times}$$

$$\text{Average Payable Period} = \frac{\textit{Total Payables}}{\textit{Net Credit Purchases}} \times 365$$

$$= \frac{Rs.1,40,000}{Rs.7,30,000} \times 365 = 70 \text{ days}$$

or

$$= \frac{Days\ in\ a\ Year}{Creditors\ Turnover}$$

$$= \frac{365}{5.21} = 70 \text{ days}$$

(i) Total Payables = Creditors + Bills Payable

= Rs. 1, 20,000 + 20,000

Rs. 1, 40,000

(ii) Net Credit Purchases = Total Purchases – Cash Purchases- Returns

= Rs. 8, 40,000 – 70,000 – 40,000

= 7, 30,000

(iii) The amount of provision for discount on creditors will not be deducted from the creditors.

4.

(i) Capital Turnover Ratio = $\frac{Sales}{Capital\ Employed}$

$$= \frac{Rs.1,60,000}{Rs.2,30,000} = 0.69 \text{ times}$$

(ii) Capital Employed:

Fixed Assets	1,60,000	
Add: Current Assets:		
Debtors	60,000	
Bills Receivables	20,000	
Cash in Bank	50,000	
	30,000	
Less: Current Liabilities:		
Creditors + B/P (40,000 + 20,000)	60,000	70,000
Capital Employed	2, 30,000	

Or

Share Capital	80,000
Add: General Reserve	30,000
Profit and Loss A/c	50,000
Mortgage Loan	80,000
	2, 40,000
Less: Preliminary Expenses	10,000
	2, 30,000

(i) Fixed Assets Turnover Ratio = $\frac{Sales}{Fixed\ Assets}$

$$= \frac{\text{Rs.1,60,000}}{\text{Rs.1,60,000}} = 1 \text{ time}$$

(ii) Working Capital Turnover Ratio $= \dfrac{Sales}{Working\ Capital}$

$$= \frac{\text{Rs.1,60,000}}{\text{Rs.70,000}} = 2.28 \text{ times}$$

(iii) Current Asset Turnover Ratio $= \dfrac{Sales}{Current\ Assets}$

$$= \frac{\text{Rs.1,60,000}}{\text{Rs.1,30,000}} = 1.23 \text{ times}$$

(iv) Total Assets Turnover Ratio $= \dfrac{Sales}{Total\ Assets}$

$$= \frac{\text{Rs.1,60,000}}{\text{Rs.2,90,000}} = 0.55$$

Check Your Progress 4

1.

i) Gross Profit Ratio $= \dfrac{Gross\ Profit}{Sales} \times 100$

$$= \frac{\text{Rs.3,84,000}}{\text{Rs.8,00,000}} \times 100 = 48\%$$

ii) Operating Profit Ratio $= \dfrac{Operating\ Profit}{Net\ Sales} \times 100$

$$= \frac{Rs.2,80,000}{Rs.8,00,000} \times 100 = 35\%$$

Operating Profit:

Net Profit + Non-operating Expenses – Non-operating Income

= Rs. 2, 81,200+Rs.3, 400 – Rs.4, 600 = Rs. 2, 80,000

iii) Operating Ratio =

$$\frac{Cost\ of\ Goods\ Sold + Operating\ Expenses}{Net\ Sales} \times 100$$

$$= \frac{\text{Rs.4,16,000} + \text{Rs.1,04,000}}{Rs.8,00,000} \times 100$$

$$= \frac{\text{Rs.5,20,000}}{\text{Rs. 8,00,000}} \times 100 = 65\%$$

Cost of Goods Sold:

Operating Stock +Purchase + Direct Exp – Closing Stock

= Rs. 60,000+Rs.4, 20,000+Rs. (28,000+8,000) – 1, 00,000 = Rs. 4, 16,000

Operating Expenses

Office Expenses + Selling and Distribution Expenses

= Rs. 48,000+Rs. 56,000

= Rs. 1, 04,000

iv) a) Office Expenses Ratio= $\frac{Office\ Expenses}{Net\ Sales} \times 100$

$= \frac{Rs.48,000}{Rs.8,00,000} \times 100 = 6\%$

b) Selling and Distribution Expenses Ratio:

$\frac{Selling\ and\ Distribution\ Expenses}{Net\ Sales} \times 100$

$= \frac{Rs.56,000}{Rs.8,00,000} \times 100 = 7\%$

c) Non-Operating Expenses Ratio =

$\frac{Non-operating\ Exp}{Net\ Sales} \times 100$

$= \frac{Rs.3,400}{Rs.8,00,000} \times 100 = 0.425\%$

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

$= \frac{Rs.2,81,200}{Rs.8,00,000} \times 100 = 35.15\%$

2.

1) Return on Capital Employed = $\frac{Net\ Profit\ After\ Tax}{Capital\ Employed} \times 100$

$\frac{Rs.1,50,000}{Rs.11,00,000} \times 100 = 13.63\%$

2) Return on Equity Shareholders' Funds:

$\frac{Net\ Profit\ \ after\ tax - Pref.\ Share\ Dividend\ Operating\ Profit}{Equity\ Shareholders,\ Funds} \times 100$

$= \frac{Rs.1,50,000 - Rs.16,000}{Rs.7,50,000} \times 100 = 35\%$

3) Return on Total Assets $= \frac{Net\ Profit\ after tax}{Total Assets} \times 100$

$$= \frac{\text{Rs.}1,50,000}{\text{Rs.}11,25,000} \times 100 = 13.33\%$$

$$\frac{Net\ Profit\ \ after\ tax + Interest}{Total\ \ Assets} \times 100$$

$$= \frac{\text{Rs.}1,50,000 + \text{Rs.}\,23,500}{\text{Rs.}11,25,000} \times 100$$

$$= \frac{\text{Rs.}1,73,500}{\text{Rs.}11,25,000} \times 100 = 15.42\%$$

☞ Check Your Progress 5

1. Dividend Yield on Equity Shares $= \frac{Dividend\ Per\ Share Net}{Marked\ \text{Pr}\,ice\ Per\ Share} \times 100$

$$= \frac{\text{Rs.}\,2\,(20\%\ \text{of Rs.}10)}{\text{Rs.}\,40} \times 100 = 5\%$$

$$\frac{Net\ Profit\ after\ tax - Pref.\ Dividend}{No.of\ \ Equity\ Shares} \times 100$$

2. Earnings per Equity Share $= \frac{\text{Rs.}\,2,70,000 - \text{Rs.}\,27,000}{\text{Rs.}80,000}$

$$= \frac{\text{Rs.}\,2,43,000}{\text{Rs.}80,000}\ \text{Rs.}3.04$$

3. Price Earnings Ratio $= \frac{Market\ Price\ Per\ Share}{Earning\ Per\ Share} \times 100$

$$= \frac{\text{Rs.}\,40}{\text{Rs.}\,3.04} \times 13.16:1$$

4. Dividend Pay-out Ratio $= \frac{Dividend\ \ per\ share}{Earning\ Per\ Share} \times 100$

$$= \frac{2}{\text{Rs.}\,3.04} \times 100 = 66\%$$