UNIT-3.

FINANCIAL MANAGEMENT

Finance is the lifeline of any business. However, finance, like most other resources, are always limited. on the otherhand, wants are always unlimited. Therefore, it is important for a business to manage its finances efficiently

Financial management :-

Financial management refers to the effective planning, organizing and controlling of monetary resources. Financial management primarily includes decisions and considerations regarding the size of investments, sources and range of use for capital and the extent of profits earned from the same. It generally involves applying different management techniques to an enterprise's financial resources to maximize profits.

Meaning :-

Financial management is the business function that deals with investing the available financial resources in a way that greater business success and return on investment is achieved.

Definition:-

"Financial management is concerned with the procurement of funds and their effective utilization in business"

—M.C. Kuchhal

scope/Elements of Financial management:-

① Investment Decision:-

Investment decision depicts investing in a fixed assets. It also referred as capital budgeting, investment decisions can be of either long term or short term basis

→ Long term Investment decisions allow committing funds towards resources like fixed assets. Long term investment decisions determine the performance of a business and its ability to achieve financial goals over time

→ Short term Investment decisions or working capital financing decisions means committing funds towards resources like current assets. It occupies funds for a shorter period including investments in inventory, liquid cash short term investment decisions directly

affect the liquidity, and performance of an organization

(2) Financing Decision :-

The scope of financial management indicates the possible sources of raising finances from various resources.

→ financial planning decisions attempt to estimate the sources and possible application of accumulated funds. A proper financial planning decision is crucial to ensure the availability of funds whenever required.

→ Capital structure decisions involve identifying various sources of funds. It facilitates the selection of the best external sources for short or long-term financial requirements

(3) Dividend Decision :-

It involves decisions taken with regards to net profit distribution. It is divided into 2 categories.

→ Dividend for shareholders — Dividend and the rate of it has to be decided

→ Retained profits — Amount of retained profits has to be finalized which will depend upon expansion and diversification plans of the enterprise.

objectives of financial management:-

→ To ensure regular and adequate supply of funds to the concern

→ To ensure adequate returns to the shareholders which will depend upon the earning capacity, market price of the share expectations of the shareholders.

→ To ensure optimum funds utilisation. once the funds are procured they should be utilized in maximum possible way at least cost

→ To ensure safety on investment i.e., funds should be invested in safe ventures so that adequate rate of return can be achieved

→ To plan a sound capital structure - There should be sound and fair composition of capital so that a balance is maintained between debt and equity capital

Features / Approaches of financial management:

The unique characteristics of financial management offers two different approaches to its functions

(1) Traditional approach
(2) modern approach

(1) Traditional Approach to finance function:-

During the 20th century, the traditional approach was also known as corporate finance. This approach was initiated to procure and manage funds for the company. For studying financial management, the following points are used

(a) Institutional source of finance
(b) Issue of financial devices to collect refunds from the capital market
(c) Accounting and legal relationship between the source of finance and business

In this approach finance was required not for regular business operations but also occasional events like reorganization, promotion, expansion, etc. It was considered essential to have funds for such events and regarded as one of the crucial functions of finance manager.

Though he was not accountable for the effective utilization of funds, however his responsibility was to get the required funds from external partners on a fair term.

The traditional approach of finance management stayed until the 5th decade of the 20th century. The traditional approach only emphasized on the fund's procurement only by corporations. Hence, this approach is narrow & defective

Limitations of traditional Approach:-

* one side approach:-

It is more considerate towards the funds procurements and the issues related to their administration, however, it pays no attention to the effective utilization of funds

* Gives importance to the financial problems of corporations:-

It only focuses on the financial problems of corporate enterprises so it narrows the opportunities of the finance function

* More Emphasis on long term Funds:-

It deals with the issues of long term financing

* Attention to Irregular events :-

It provides funds to irregular events like incorporation, mergers etc and does not give attention to everyday business operation

(2) modern Approach to finance function :-

with technological improvement, increase competition and the development of strong corporate, it was important for management to use the available financial resources in its best possible way. Therefore the traditional approach become inefficient in a growing business environment.

The modern approach had a more comprehensive analytical viewpoint with a focus on the procurement of funds and its active and optimum use. Fund arrangement is an essential feature of the entire finance function.

The main elements of this approach are evaluation of alternative utilisation of funds, capital budgeting, financial planning, working capital management, ascertainment of financial standards for business success etc.

The 3 critical decisions taken under this approach are

→ Investment Decision
→ Financing Decision
→ Dividend Decision

Features of modern Approach:-

* more emphasis on financial Decisions:-
more analytic and less descriptive as the right decisions for a business can be taken only on the base of accounting and statistical data

* continuous function:-
It is a constant activity where the financial manager makes different financing decisions unlike the traditional approach

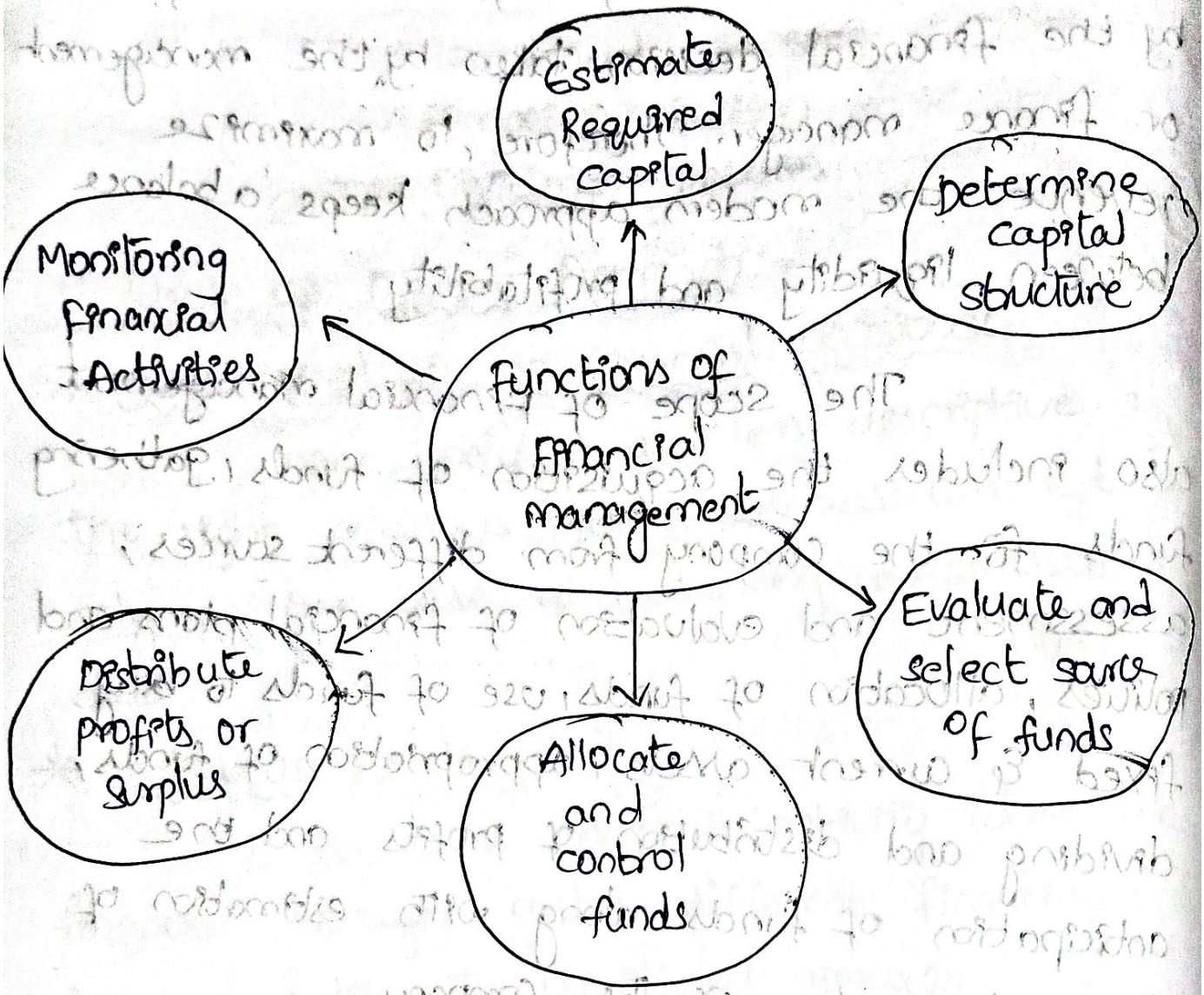
* Broader view:-
It gives importance not only to optimum use of finance but also fund procurement. similarly it also incorporates features relating to the cost of capital, capital budgeting and financial planning etc

* measure of performance:-

performance of a firm is also affected by the financial decision taken by the management or finance manager. Therefore, to maximize revenue the modern approach keeps a balance between liquidity and profitability

The scope of financial management also includes the acquisition of funds, gathering funds for the company from different sources, assessment and evaluation of financial plans and policies, allocation of funds, use of funds to buy fixed & current assets, appropriation of funds, dividing and distribution of profits and the anticipation of funds along with estimation of financial needs of the company.

Functions of Financial management :-



* Determine the capital Requirement :-

The first function of a financial manage is to estimate the total capital required by the business to fulfil its mission and objectives. The amount of capital required is determined by several factors including size of the business, expected profits, company programmes & policies.

* Establish capital structure :-

After estimating the required capital, the structure must be determined. short term and long term equity is used in the structure. It will also determin how much capital the company must own and how much must be raised from outside sources such as IPO's & so on.

* Determining Funding sources :-

The next function is to determine where the capital will come from. The company may decide to take out bank loans, approach investors for capital in exchange for equity or hold an IPO to raise funds from the public in exchange for shares. The source of funds is chosen and ranked based on the benefits & limitation of each source

* Fund Investment :-

To decide how to allocate funds to profitable ventures. The financial manager must calculate the risk and expected return for each investment. The investment methods must also be chosen so that there is minimum loss of fund and maximum profit optimisation.

* Implement financial controls :-

controls can take the form of financial forecasting, cash analysis, ratio analysis, profit distribution methods and so on. This information can assist the financial manager in making future financial decisions for the company.

* Mergers and Acquisitions :-

They both are one method of business growth. Buying new or existing businesses that align with buyer company's mission and goals is reffered to as an acquisition. A merger occurs when two current companies combine to form a new company. one of the responsibilities of a financial manager is to assist in the merger and acquisition decision by carefully examining the financials and securities of each company.

* work on capital Budgeting:-

capital budgeting refers to decisions made regarding the purchase of assets, the construction of new facilities and the investment in stocks or bonds. prior to making a significant capital investment, organisations must first identify opportunities & challenges.

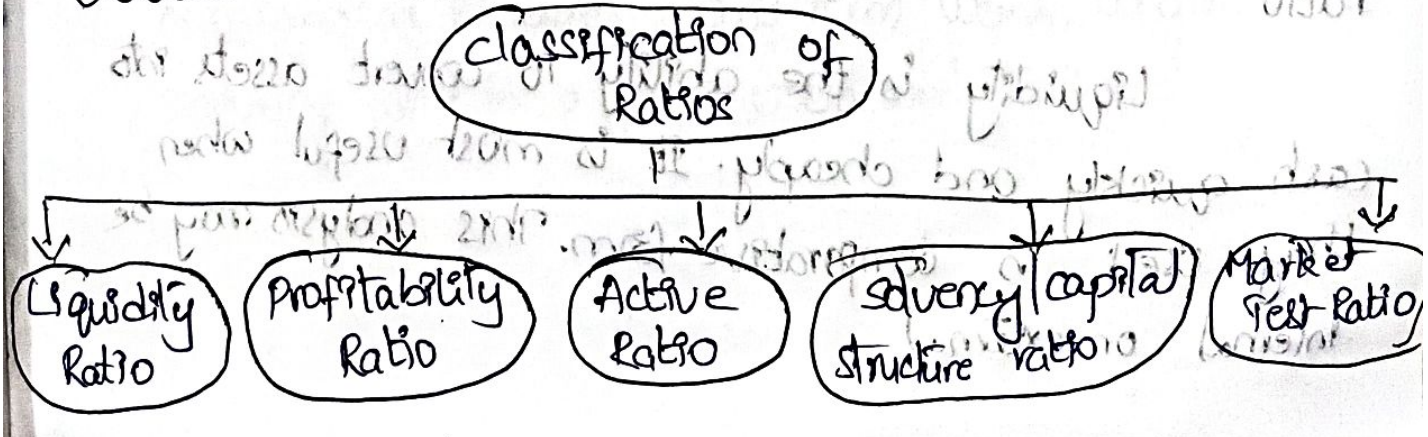
Ratio Analysis

Ratio Analysis is a quantitative method of gaining insight into a company's liquidity, operational efficiency, and profitability by studying its financial statements such as the Balance sheet and Income statements. Ratio analysis is a cornerstone of fundamental equity analysis

Financial Analysis through ratios:-

Ratio analysis is a technique of analysis the financial statements by computing various ratios. It measures the profitability, efficiency, financial soundness the business.

classification of ratios:-



functional classification of ratios:-

- Liquidity Ratios
  - * current ratio
  - * Quick ratio
- Long term solvency ratios
  - * Debt Equity ratio
  - * proprietary ratio
  - * capital gearing ratios
- Turnover ratios
  - * stock turnover ratio
  - * Trade receivables turnover ratio
  - * Trade payables turnover ratio
  - * fixed Asset turnover ratios
- Profitability ratios
  - * Gross profit ratio
  - * operating cost ratio
  - * operating profit ratio
  - * Net profit ratio
  - * Return on Investment

Liquidity Ratio :-

Liquidity ratios measure a company's ability to pay debt obligations and its margin of safety through the calculation of metrics including the current ratio, quick ratio and operating cash flow ratio

Liquidity is the ability to convert assets into cash quickly and cheaply. It is most useful when they are used in comparative form. This analysis may be internal or external

These are 3 types

(a) current ratio
(b) Quick / Liquidity / Acid test ratio
(c) Absolute Liquid ratio - Super quick ratio

(a) current ratio :- (working capital Ratio)

It measures a company's ability to payoff its current liabilities (payable with in 1 year) with its total current assets such as cash, account receivables and Inventories. Ideal current ratio is 2:1

→ The higher the ratio the better the company's liquidity positions.

$$\text{current ratio} = \frac{\text{current Assets}}{\text{current Liabilities}}$$

current Assets :- cash in hand, cash at Bank, Prepaid Expenses, Bills Receivable, Debtors, stocks, short term Investments (or) marketable securities, Accured Incomes

current Liabilities :- Bank overdraft, Bills payable, creditors, provisions for taxation, proposed Dividend, outstanding Expenses, short-term loans, Long term loans maturing with in a year, unclaimed Dividend.

(1) The balance sheet of Ashish Ltd as at 31st March 2016

Liabilities	Rs	Assets	Rs
Share Capital	1,90,000	Trade Investments (long term)	2,00,000
Reserves	1,50,000	Stock	1,00,000
15% Debentures	50,000	Debtors	45,000
Trade creditors	30,000	marketable securities	40,000
Bills payable	40,000	Cash	60,000
O/s expenses	15,000	Bills Receivables	55,000
Bank overdraft	20,000	Prepaid expenses	10,000
Provision for Tax	25,000	Preliminary Expenses	10,000
	5,20,000		5,20,000

Calculate current ratio

Sol:- Current Ratio = $\frac{\text{Current Assets}}{\text{Current Liabilities}}$

Current Assets = Stock + Debtors + marketable securities + Cash + Bills Receivables + Prepaid Expenses

= 1,00,000 + 45,000 + 40,000 + 60,000 + 55,000 + 10,000

= 3,10,000

Current Liabilities = Trade creditors + Bills payable + O/s Expenses + Bank O.D + provision for Tax

= 30,000 + 40,000 + 15,000 + 20,000 + 25,000

= 1,30,000

Current Ratio = $\frac{3,10,000}{1,30,000}$

= 2.38 (or) 2.38 : 1

(b) Quick / Acid Test / Liquid Ratio:-

It is used to determine short term solvency of the firm. This ratio is more precise than current ratio as it describes the relationship between current liabilities and quick assets. The quick ratio measures the firm's ability to meet its current obligations. This ratio is generally used in conjunction with the current ratio.

$$\text{Quick Ratio} = \frac{\text{Quick Assets}}{\text{current / Quick Liabilities}}$$

Quick Assets have the characteristics of easy conversion into cash and include cash, debtors, Temporary investments, and bills receivable. It does not include inventory and prepaid expenses since these assets take considerable time and effort for conversion into cash

Quick Assets = Current Assets − (stock + prepaid expenses)

The Distinction between Quick liabilities and current liabilities is of Bank overdraft and cash credit. It is because they are secured by inventories. Quick liabilities are defined as current liabilities less the value of Bank overdraft and cash credit

Quick Liabilities = current liabilities − (Bank Overdraft + cash Credit)

Ideal quick ratio is 1:1

Calculate Quick ratio from the information given

Liabilities	Rs	Assets	Rs
Debentures	4,00,000	stock in Trade	2,50,000
Bank loan	1,50,000	Sundry Debtors	1,00,000
Sundry creditors	20,000	cash in hand	90,000
Bills payable	10,000	cash at Bank	1,10,000
Creditors for expenses	1,00,000	short term Investments	1,50,000
Bank overdraft	1,00,000	Prepaid Insurance	5000
		Bills Receivable	1,90,000
	7,80,000		7,80,000

Sol:- Quick Ratio = $\frac{\text{Quick Assets}}{\text{Quick Liabilities}}$

Quick Assets = current Assets − (stock + prepaid Expenses)

= 7,80,000 − (2,50,000 + 5,000) = 5,25,000

Quick Liabilities = current liabilities − Bank OD

= 2,30,000 − 1,00,000 = 1,30,000

Quick Ratio = $\frac{5,25,000}{1,30,000}$ = 4.03

= 4:1

(c) Absolute Liquid Ratio :- (cash ratio)

It is calculated to analyze the short term solvency or financial position of the firm. It is measured whether the company has the ability to clear off debts only using the liquid assets (cash and cash equivalents such as marketable securities). It is used by creditors for determining the relative ease with which company can clear short term liabilities

$$\text{cash ratio} = \frac{\text{Cash \& Equivalent}}{\text{current liabilities}}$$

From the following given information calculate cash ratio.

Inventory	1,50,000
cash	50,000
Sundry Debtors	3,00,000
creditors	3,50,000
Bills Receivables	30,000
Bank O.D	30,000

Sol:-

$$\text{Cash ratio} = \frac{\text{Cash \& Equivalent}}{\text{Current liabilities}}$$

Current liabilities = Creditors + Bank O.D

$$= 350,000 + 30,000$$

$$= 3,80,000$$

Cash & Equivalent = Cash

$$= 50,000$$

$$= \frac{50,000}{3,80,000} = 0.13 : 1$$

Leverage / Long term solvency Ratios:-

It deals with longterm solvency position of the business and these help to know whether the business could be able to honour its interest payment and principle payment commitments. These ratios includes

(a) Debt Equity Ratio
(b) proprietary Ratio
(c) capital gearing ratio

(a) Debt Equity Ratio:- (External - Internal Equity ratio)

It is used to determine the effic of a firm's long term financial planning. It also compares the stakes held by the insiders as well as the outsiders. This ratio shows the relationship between equity funding and debt funding.

$$\text{Debt-Equity Ratio} = \frac{\text{Total Long term Debt}}{\text{shareholders' funds}}$$

(or)

$$= \frac{\text{External Equities}}{\text{Internal Equities}}$$

Total Long Term Debt = Debentures + Term loans + Loan on mortgage + Loans from financial Institutions + other long term loans + Redeemable preference share capital

Shareholders' fund = Equity share capital + Irredeemable Preference share capital + Capital Reserves + Retained earning + Any earmarked surplus like provisions for contingencies etc — Fictitious Assets

From the following information, calculate the debt-equity ratio

Debentures	1,40,000
Long term loan	60,000
Bank balance	30,000
Debtors	70,000
General Reserve	40,000
Creditors	66,000
Share capital	1,20,000
Bills payable	14,000

Sol:- Debt-Equity ratio = $\frac{\text{Total longterm Debt}}{\text{shareholders' fund}}$

Total longterm Debt = Debentures + Longterm loan

= 40,000 + 60,000

= 1,00,000

shareholders fund = Capital + General Reserve

= 1,20,000 + 40,000

= 1,60,000

Debt-Equity ratio = $\frac{1,00,000}{1,60,000} = \frac{5}{4}$ (or) 1.25:1

(b) proprietary ratio :-

It establishes the relationship between proprietors funds and the total assets of the business. The main purpose is to determine the sarces for financing the assets

proprietors funds excluding fictitious assets like preliminary expenses

Proprietory Ratio = $\frac{\text{Proprietors funds / shareholders funds}}{\text{Total Assets}}$

From the following, calculate proprietary ratio. Proprietors funds are Rs. 6,00,000 and total assets are Rs. 8,00,000

Sol: Proprietary Ratio = $\frac{\text{proprietor's funds}}{\text{Total Assets}}$

$= \frac{6,00,000}{8,00,000} = 3:4$

This ratio can also be represented in percentage which indicates the percentage of owner's capital to total capital of the firm

Proprietary Ratio = $\frac{\text{proprietor's fund}}{\text{Total Assets}} \times 100$

$= \frac{6,00,000}{8,00,000} \times 100$

$= 75\%$

(c) capital gearing ratio:-

It explains relationship between Equity share capital and fixed interest bearing securities including preference share. The purpose of this ratio equity share capital includes reserves

$$\text{capital gearing ratio} = \frac{\text{Equity share capital + Reserves \& surplus}}{\text{Preference share capital + Longterm Debt Bearing fixed interest}}$$

From the information calculate the capital gearing ratio

	2015	2016
Equity share capital	6,00,000	4,00,000
Reserve & surplus	3,00,000	2,00,000
8% Preference share capital	2,50,000	4,00,000
6% Debentures	2,50,000	4,00,000

Sol:- $\text{CG Ratio} = \frac{\text{Eq. share capital + Reserve \& surplus}}{\text{Pref. share capital + Longterm Debt bearing fixed interest}}$

$$\text{CG Ratio 2015} = \frac{6,00,000 + 3,00,000}{2,50,000 + 2,50,000} = \frac{9,00,000}{5,00,000} = 9:5 \text{ (Low Gear)}$$

$$\text{CG Ratio 2016} = \frac{4,00,000 + 2,00,000}{4,00,000 + 4,00,000} = \frac{6,00,000}{8,00,000} = 6:8 \text{ (High Gear)}$$

Activity / Turnover Ratios :-

Various assets are employed in the business to generate revenue & profits. Better managed assets help to generate higher profits for the business. This ratio show the intensity with which the assets are converted into sales. It includes

(a) Fixed Assets Turnover ratio
(b) Stock Turnover ratio
(c) Debtors turnover ratio
(d) Creditors / payable turnover ratio
(e) Working capital turnover ratio
(f) Total Assets Turnover ratio

(a) Fixed Assets turnover ratio :-

It matches fixed assets with sales revenue. It shows the efficiency of business which uses its fixed assets for the purpose of generating revenue & profits. A high fixed assets turnover ratio shows that the company is quickly turning its fixed assets into sales.

$$\text{Fixed Assets turnover ratio} = \frac{\text{Net Sales}}{\text{Net fixed Assets}}$$

Net sales = Gross sales − sales returns

Net fixed assets = Gross fixed Assets − Depreciation

ABC company has gross fixed assets of ₹.5,00,000 and accumulated depreciation of ₹.2,00,000, Sales over the last 12 months totalled ₹.9,00,000 calculate the fixed asset turnover ratio of ABC company

Sol:- Fixed Assets Turnover ratio = $\frac{\text{Net sales}}{\text{Net fixed assets}}$

Net sales = ₹.9,00,000

Net fixed assets = Gross fixed Assets − Depreciation

= 5,00,000 − 2,00,000

= ₹.3,00,000

$\frac{9,00,000}{3,00,000}$ = 3 times.

(b) stock Turnover ratio :-

Also known as "Inventory Turnover ratio" or "stock velocity ratio". It shows the relationship between cost of goods sold and average inventory

stock Turnover ratio = $\frac{\text{cost of Goods sold}}{\text{Average Inventory}}$

cost of Goods sold = sales − Gross profit

(or)

cost of Goods sold = opening stock + purchases + Direct expenses − closing stock

$$\text{Average stock} = \frac{\text{opening stock} + \text{closing stock}}{2}$$

Note:-

→ closing stock figure may be used if opening stock amount is not available

→ Net sales numbers may be used in place of cost of Goods sold

$$\text{Stock Turnover ratio} = \frac{\text{Net sales}}{\text{Average stock}}$$

Inventory conversion period (stock velocity):-

This ratio shows the number of days taken by the inventory to be converted into sales. It shows average time taken by the firm to clear its stock.

$$\text{Inventory conversion period} = \frac{12 \text{ months} / 52 \text{ weeks} / 365 \text{ Days}}{\text{Stock Turnover ratio}}$$

If 365 Days are used then the ratio shows the number of days in which the stock is converted into sales

$$\text{Inventory conversion period} = \frac{365}{\text{Inventory Turnover ratio}} = \text{No. of days}$$

M/s XYZ & Co., supplies the following information for the year ending 31st Dec 2015.

Credit sales	1,75,000
Cash sales	2,50,000
Return Inward	25,000
opening stock	25,000
closing stock	35,000

Find out 1) stock Turnover when Gross profit ratio is 20%
2) stock conversion period

Sol:- stock Turnover ratio = $\frac{\text{Cost of Goods sold}}{\text{Average stock}}$

Cost of Goods sold = Net sales − Gross profit

Net sales = 1,75,000 + 2,50,000 − 25,000 = 4,00,000

Gross profit on sales = $\frac{4,00,000 \times 20}{100}$ = 80,000

Cost of Goods sold = Net sales − Gross profit
= 4,00,000 − 80,000 = ₹. 3,20,000

Average stock = $\frac{\text{opening stock + closing stock}}{2}$

= $\frac{25,000 + 35,000}{2}$ = $\frac{60,000}{2}$ = ₹. 30,000

Stock Turnover ratio = $\frac{3,20,000}{30,000}$ = 10.67 times

This means that during the year, the average stock is being sold 10.67 times

Stock conversion period = $\frac{365}{\text{Stock Turnover ratio}}$

= $\frac{365}{10.67}$

= 34.21 (or) 34 days.

(c) Debtors turnover ratio:-

Also known as "Ratio of net sales to Gross Receivable" or "Receivable Turnover" or "Debtors velocity".

It shows the relationship between average account receivable and net credit sales. This ratio is used to determine the efficiency of business in collecting its credits.

Debtors Turnover ratio = $\frac{\text{Net Credit Sales}}{\text{Average Accounts Receivable (or) Average Trade Debtors}}$

Accounts Receivable = Debtors + Bills Receivable

Average Accounts Receivable = $\frac{\text{opening Account Receivable} + \text{closing Account Receivable}}{2}$

If information relating to credit sales and average debtors is not available, the ratio can be worked out as follows

Debtors Turnover ratio = $\frac{\text{Total sales}}{\text{closing Debtors}}$

Debt collection period / Debtor's velocity:-

The debt collection period shows the average number of days a firm takes to collect its debt. There are several ways to calculate this ratio

(1) Debt collection period = $\frac{\text{Average Trade Debtors}}{\text{sales per Day}}$

∴ Average Trade Debtors = Debtors + Bills Receivables

(2) sales per Day = $\frac{\text{Net sales}}{\text{Number of working Days}}$

Debt collection period = $\frac{\text{Average Trade Debtors} \times \text{No. of working days}}{\text{Net sales}}$

If the period is given in months:-

$$\text{Debt collection period} = \frac{\text{Average Trade Debtors}}{\text{Net sales}} \times \text{No. of months}$$

(or)

$$\frac{\text{Number of working days}}{\text{Debtors Turnover ratio}} = \text{No of Days}$$

Calculate the Debtors Turnover ratio and average debt collection period for the year 2014-2015.

Particulars	2014	2015
Sundry Debtors	15,000	45,000
Bills Receivable	5,000	15,000
provision for Doubtful debts	1,500	4,500

Total sales ₹. 2,20,000

Sales returns ₹. 20,000

Cash sales ₹. 40,000

Sol:- Debtors Turnover ratio = $\frac{\text{Net credit sales}}{\text{Average Trade Debtors}}$

Net credit sales = Total sales − Sales Returns − cash sales

= 2,20,000 − 20,000 − 40,000

= ₹1,60,000

Average Debtors = $\frac{\text{opening Debtors + closing Debtors + opening Bills Receivables + closing Bills Receivable}}{2}$

= $\frac{15,000+45,000+5,000+15,000}{2} = \frac{80,000}{2}$

= ₹40,000

Debtors Turnover ratio = $\frac{1,60,000}{40,000}$ = 4 times.

Avg Debt collection period = $\frac{12 \text{ Months}}{\text{Debtors turnover ratio}}$

= $\frac{12 \text{ months}}{4 \text{ times}}$

= 3 months.

(d) Creditors Turnover ratio / payables Turnover ratio :-

It shows relationship between Net credit purchases and average trade creditors. This ratio is closely related to the concept of float. It also measures the efficiency of business in utilising its cash & proper manner.

$$\text{Creditors Turnover ratio} = \frac{\text{Net credit purchases}}{\text{Average Trade creditors}}$$

∴ Net credit purchases = Gross credit purchases − purchase returns

$$\text{Average purchases} = \text{Creditors} + \text{Bills payable}$$

$$\text{Average Trade creditor} = \frac{\text{opening Trade creditors} + \text{closing Trade creditors}}{2}$$

If opening figure for creditors is not available then the closing figure may be used. In such case formula will be

$$\text{Creditors Turn over ratio} = \frac{\text{Total purchases}}{\text{closing creditors}}$$

Debt payment period (Creditors' velocity):-

It shows the average period for which the credit purchases remains outstanding & the average credit period actually availed of

$$\text{Debt payment period} = \frac{\text{Average Trade creditors}}{\text{Average Net credit purchases per day}}$$

$$= \frac{\text{12 months / 52 weeks / 365 days}}{\text{Creditors turnover ratio}}$$

$$\text{Average Net credit purchases per day} = \frac{\text{Net credit purchases for the year}}{\text{No. of working days in the year}}$$

Calculate Creditor's turnover ratio & debt payment period from the following :

Particulars	₹.	Particulars	₹.
Cash purchases	1,00,000	Total purchases (Subject to Returns)	4,07,000
Opening Sundry creditors	25,000	closing Sundry creditors	30,000
closing Bills payable	25,000	opening Bills payable	20,000
Purchases returns	7,000		

Sol:- Creditors Turnover ratio = $\frac{\text{Net credit Purchases}}{\text{Average Trade creditors}}$

Net credit purchases = Total purchases − cash purchases − purchases returns

$= 4107{,}000 - 1{,}00{,}000 - 7{,}000$

$= ₹\ 3{,}00{,}000$

Average Trade creditors $= \frac{(25{,}000 + 20{,}000 + 30{,}000 + 25{,}000)}{2}$

$= ₹\ 50{,}000$

Creditors Turnover ratio $= \frac{3{,}00{,}000}{50{,}000}$

$= 6$ times

Debt payment period $= \frac{12 \text{ months}}{\text{Creditors Turnover ratio}} = \frac{12 \text{ month}}{6 \text{ times}}$

$= 2$ months.

(e) Working capital Turnover ratio :-

This ratio explains the relationship between Net sales and working capital. The ratio depicts the number of times working capital was turned over to generate the given sales volume during the time period under consideration. This ratio can be used for making temporal and inter-firm comparisons. With this ratio, a business can gauge its future capital requirements

working capital = current Assets — current Liabilities

The main objective of this ratio is to determine the velocity with which net working capital is utilized. The ratio shows the number of times the working capital was revolved over in a given year. It indicates the efficiency of a firm in utilizing its working capital.

$$\text{working capital Turnover ratio} = \frac{\text{Net sales}}{\text{working capital}}$$

$$= \frac{\text{cost of goods sold}}{\text{Net working capital}}$$

Net sales = Gross sales − sales Return

Calculate working capital Turnover ratio from the following

Current Assets	6,00,000
Current liabilities	1,20,000
Credit sales	12,00,000
Cash sales	2,60,000
Sales returns	20,000

Solution: Working capital Turnover ratio = $\frac{\text{Net sales}}{\text{working capital}}$

Net sales = cash sales + credit sales − sales returns

= 2,60,000 + 12,00,000 − 20,000

= ₹ 14,40,000

working capital = current Assets − current liabilities

= 6,00,000 − 1,20,000

= ₹ 4,80,000

working capital Turnover ratio = $\frac{14,40,000}{4,80,000}$

= 3 times

(f) Total Assets turnover ratio:-

It explains relationship between sales and total assets. This ratio used to measure the overall activity and performance of the business concern.

$$\text{Total Assets turnover ratio} = \frac{\text{Sales}}{\text{Total assets}}$$

Compute Total Assets turn over ratio from the following

Sales	3,00,000
Sales return	40,000
Fixed Assets	2,00,000
current Assets	1,50,000

Sol:- Total Assets turn over ratio = $\frac{\text{Sales}}{\text{Total assets}}$.

$$= \frac{2,60,000 \ (3,00,000 - 40,000)}{3,50,000 \ (2,00,000 + 1,50,000)}$$

$$= 0.74 : 1$$

Profitability Ratios:-

A Business exists to make profits. It requires profits not only for survival but also for expansion and diversification. Profits can be used for determining the efficiency of management and employees. It also useful for providing security to the creditors. The profitability is also important to determine the impact of various decisions such as price cuts, increase in selling price and change in tax structure on the efficiency of the business

various profitability ratios are

(a) Gross profit ratio
(b) Net profit ratio
(c) operating ratio
(d) operating profit ratio
(e) Expenses ratio
(f) Return on capital employed / Return on Investment
(g) Earnings per share
(h) Price Earning ratio / PE ratio (Earning Yield ratio)
(i) Market capitalisation ratio
(j) Return on Equity / Return on Equity shareholders funds

(a) Gross profit ratio :-

Also known as "Gross margin ratio" or "Trading margin ratio". Generally expressed in percentage and shows the relationship between net sales and gross profit.

It is helpful for determining the ability of the business to meet its operating expenses. It also shows shareholder's share after meeting operating expenses.

$$\text{Gross profit ratio} = \frac{\text{Gross profit}}{\text{Net sales}} \times 100$$

Gross profit = Net sales − cost of goods sold

cost of goods sold = opening stock + purchases (net) + Direct Expenses − closing stock

Net sales = Total sales − sales returns

The Trading & profit & loss account and the Balancesheet of ABC. Ltd are as under.

Trading & P&L Account for the year ending on 31st march 2016

Dr

Particulars	₹.	Particulars	₹.
To opening stock	50,000	By sales	5,00,000
" Purchases	1,00,000	" closing stock	1,00,000
" wages	50,000	" Interest & Dividend on long term Investment	50,000
" carriage Inward	25,000		
" Office & Admin Expense	25,000	" profit on sales of long term Investment	25,000
" Finance Exp	20,000		
" Net profit (After Interest & Tax)	4,05,000		
	6,75,000		6,75,000

Prepare statements showing the computation of gross profit and calculate gross profit ratio

Sol:- Statement showing the computation of Gross profit

Particulars		₹.
Sales		5,00,000
Less:- cost of Goods sold		
opening stock	50,000	
Purchases	1,00,000	
wages	50,000	
carriage Inward	25,000	
	2,25,000	
Less:- closing stock	1,00,000	
		1,25,000
Gross profit →		3,75,000

(10)

$$\text{Gross profit Ratio} = \frac{\text{Gross profit}}{\text{Net sales}} \times 100$$

$$= \frac{₹.3,75,000}{₹.5,00,000} \times 100$$

(10)

$$= 75\%$$

(b) Net profit ratio :-

Also known as "the net profit to sales ratio" or "Net profit margin" and expresses the rate of the net profit for every unit of revenue. The ratio is calculated by dividing net profit by net sales for the concerned period.

$$\text{Net profit ratio} = \frac{\text{Net profit}}{\text{Net sales}} \times 100$$

Two different approaches may be used for this purpose as net profit may be defined as net profit before tax or net profit after tax

$$\text{Net profit} = \frac{\text{Net profit before Tax}}{\text{Net sales}} \times 100$$

(or)

$$\frac{\text{Profit before Tax}}{\text{Net sales}} \times 100$$

$$\text{Net profit} = \frac{\text{Net profit after Tax}}{\text{Net sales}} \times 100$$

(or)

$$\frac{\text{Profit after Tax}}{\text{Net sales}} \times 100$$

From the following details, calculate net profit ratio

Total sales	1,00,000
sales returns	6,000
cost of sales	70,000
Indirect Expenses	10,000

Sol:- Net profit ratio = $\frac{\text{Net profit}}{\text{Net sales}} \times 100$

Net profit = Net sales − (Cost of sales + Indirect expenses)

= 94000 − (70,000 + 10,000)

= 94000 − 80,000

= ₹14,000

Net sales = Total sales − sales returns

= 1,00,000 − 6,000

= ₹. 94000

Net profit ratio = $\frac{14000}{94,000} \times 100$

= 14.89%

(C) Operating Ratio :-

This ratio measures the relation between sales and the expenses incurred for making such sales.

$$\text{operating ratio} = \frac{\text{cost of Goods sold} + \text{operating expenses}}{\text{Net sales}} \times 100$$

operating expenses are charged against earnings which include administrative expenses like salary, tax, rent, light bills, legal shares and selling and distribution expenses like packing, warehousing, discount received, commission on sales etc. This ratio ignores non-operating income and expenses eg., financial expenses and incomes such as interest, provision for taxation etc

From the following details, calculate operating ratio

Sales	8,50,000
opening stock	99,500
Purchases	5,50,500
carriage Inwards	10,000
closing stock	1,40,000
Depreciation	20,000
Administrative expenses	1,50,000
selling expenses	30,000
Loss on the sale of Assets	4,000

Sol:-

$$\text{operating ratio} = \frac{\text{cost of Goods sold} + \text{Administrative expenses} + \text{Selling \& Distribution Expenses}}{\text{Net sales}} \times 100$$

cost of Goods sold = sales − Gross profit

Gross profit = (sales + closing stock) − (opening stock + purchases + Carriage Inwards)

= (8,50,000 + 1,40,000) − (99,500 + 5,50,000 + 10,000)

= 9,60,000 − 6,60,000

= ₹ 3,30,000

cost of Goods sold = sales − Gross profit

= 8,50,000 − 3,30,000

= ₹ 5,20,000

$$\text{operating ratio} = \frac{5,20,000 + 1,50,000 + 30,000 + 20,000 (\text{dep})}{8,50,000} \times 100$$

$$= \frac{7,20,000}{8,50,000} \times 100$$

= 84.70%

(d) operating profit ratio :-

This ratio is a type of net profit and determine the relationship between operating profit and sales.

$$\text{Operating profit ratio} = \frac{\text{operating profits}}{\text{Net sales}} \times 100$$

operating profit is the difference between operating revenue and operating expenses such as cost of goods sold, selling & distribution expenses and office & administration expenses. It ignores non-operating expenses & incomes. Financial expenses such as interest, taxation, dividend and losses due to fire are also excluded

operating profit = Sales − (cost of Goods sold + Administration office Expenses + selling & distribution expenses)

(or)

Operating Net profit = Net profit + Non operating expenses − Non-operating Incomes

(or)

operating Net profit = Gross profit + operating Income − operating Expenses

Calculate operating profit ratio from the given information

Cost of Goods sold	4,00,000
Admin & office Expenses	40,000
Selling & Distribution Expenses	40,000
Net sales	6,00,000

Sol:-

$$\text{Operating profit ratio} = \frac{\text{operating profit}}{\text{net sales}} \times 100$$

Operating profit = Sales − (Cost of Goods sold + Administrative office Expenses + Selling & Distribution Expenses)

$= 6,00,000 - (4,00,000 + 40,000 + 40,000)$

$= 6,00,000 - 4,80,000$

$= ₹\ 1,20,000$

$$\text{Operating profit ratio} = \frac{1,20,000}{6,00,000} \times 100$$

$= 20\%$

(C) Expenses ratio :-

This ratio shows the relationship between several expenses and net sales. This ratio depicts the increase and decrease of expense. Lower expense ratio show efficiency in operations.

$$\text{Expense ratio} = \frac{\text{Amount of expenses}}{\text{Net sales}} \times 100$$

Different expense heads can be used for this purpose. Various ratios included under this category are Administrative expenses to Net sales, ratio of selling & distribution expenses to sales, financial expenses to sales etc.

For Administrative expenses to Net sales ratio

$$= \frac{\text{Administrative \& office Expenses}}{\text{Net sales}} \times 100$$

For selling & distribution expenses to Net sales ratio

$$= \frac{\text{Selling \& Distribution Expenses}}{\text{Net sales}} \times 100$$

For financial expenses to Net sales ratio

$$= \frac{\text{Financial expenses \& Interest}}{\text{Net sales}} \times 100$$

Profit & Loss A/c of ABC Trading House for the year ended 31-3-2015

Dr | Cr

Particulars	₹.	Particulars	₹.
To Administrative Exp.,	80,000	By Gross profit b/d	2,00,000
" Selling & distribution Exp.,	50,000	" Interest on investment	5,000
" Financial Exp.,	6,000		
" other non-operating Exp.,	41,000		
" Net profit	65,000		
	2,05,000		2,05,000

The Net sales during year ₹. 5,00,000 Calculate (i) Administrative Expenses ratio (ii) selling & distribution expense ratio (iii) Financial expenses ratio

Sol:-

(i) Administrative Expenses ratio

$$= \frac{\text{Administrative expenses}}{\text{Net sales}} \times 100 \Rightarrow \frac{80,000}{5,00,000} \times 100 = 16\%$$

(ii) selling & Distribution expenses ratio

$$= \frac{\text{selling \& Distribution expenses}}{\text{Net sales}} \times 100 \Rightarrow \frac{50,000}{5,00,000} \times 100 = 10\%$$

(iii) Financial Expenses ratio

$$= \frac{\text{Financial expenses}}{\text{Net sales}} \times 100 \Rightarrow \frac{6,000}{5,00,000} \times 100 = 1.2\%$$

(f) Return on capital employed / Return on Investment :-

It is calculated by using net income and total capital employed. The ratio is useful for assessing the firm's ability to generate sufficient return on its capital invested. It is expressed as a percentage

$$\text{Return on capital employed} = \frac{\text{Net Income before Interest \& Tax}}{\text{capital employed}} \times 100$$

The capital employed may be interpreted in different ways

(1) Gross capital employed :- It includes fixed as well as current assets. Fixed assets calculated after deducting Depreciation

Gross capital employed = Fixed Assets + current Assets

(2) Net capital employed :- It refers to sum of working capital and fixed assets. It may also be defined as total assets minus current liabilities

From the following calculate Return on Investment

Share Capital:

Equity	4,00,000
Preference	1,00,000
General Reserve	1,89,000
10% Debentures	4,00,000
Current liabilities	1,00,000
Discount on shares	5,000
Net profit (after debentures interest but before Income Tax)	80,000

Sol:- Return on Investment = $\frac{\text{Net profit before Interest \& Tax}}{\text{capital employed}} \times 100$

NPBT = Net profit + Debenture Interest

= 80,000 + 10% of 4,00,000 ($4,00,000 \times \frac{10}{100}$)

= 80,000 + 40,000

= ₹ 1,20,000

Capital Employed = Equity + preference capital + 10% Debentures + General Reserve + profit − Discount shares

= 4,00,000 + 1,00,000 + 4,00,000 + 1,89,000 + 40,000 (50% Net profit) − 5,000

= ₹. 11,24,000

ROI = $\frac{1,20,000}{11,24,000} \times 100 = 10.68\%$

Note:- Net profit taken after assuming IT rate @ 50%

(9) Earnings per share (EPS):-

This ratio is calculated to find profitability per share.

$$EPS = \frac{\text{Net profit after Tax, Interest \& Preference Dividend}}{\text{No. of Equity shares}}$$

From the extracted data. calculate EPS

20,000 Equity shares of ₹.10 each	2,00,000
20,000 10% preference shares of ₹.10 each	2,00,000
Net profit before paying dividend to preference shares	1,00,000

Sol:-

Particulars	₹
Net profit as per P&L A/C	1,00,000
Less:- Dividend to Preference shareholders 10% on ₹.2,00,000 (2,00,000 × 10/100)	20,000
Balance of profit available to Equity shareholders.	80,000

$$EPS = \frac{\text{Net profit after Dividend on preference shares}}{\text{No. of Equity shares}}$$

$$= \frac{80,000}{20,000} = ₹.4 \text{ per share}$$

(h) price Earning ratio / PIE ratio / Earning yield ratio :-

It establishes relationship between market price of the share & its earnings.

$$\text{PIE ratio} = \frac{\text{Market price per share}}{\text{Earning per Equity share}}$$

The capital of star ABC Ltd is as follows

Particulars	₹.
80,000 Equity shares of ₹. 10 each,	8,00,000
10%. 30,000 preference shares of ₹. 10 each	300,000
	11,00,000

The following information has been obtained from the books of the company

profit after Tax @ 60%	₹. 2,70,000
Depreciation	₹. 60,000
Equity Dividend paid	20%
Market price of Equity share	₹. 40

Calculate PIE ratio

Sol:- P/E ratio = $\frac{\text{Market price per share}}{\text{Earnings per share}}$

EPS = $\frac{\text{Net profit after Tax, Interest \& preference Dividend}}{\text{No. of equity shares}}$

= $\frac{2,70,000 - 30,000}{80,000}$

= $\frac{2,50,000}{80,000}$ = 3.

P/E ratio = $\frac{40}{3}$ = 13.3 : 1

(b) Market capitalisation ratio:-

This ratio establishes the relationship between earnings per share and market price. This is also referred to as "mid cap".

Capitalisation Ratio = $\frac{\text{Earnings per share}}{\text{Market price per share}} \times 100$

EPS = $\frac{\text{Net profit after Tax, Interest \& Preference Dividend}}{\text{No. of Equity shares}}$

When the market price is received with dividend, it is referred to as "dividend yield ratio". Dividend yield ratio is calculated by comparing market price of the share with the dividend paid.

Dividend yield ratio = $\frac{\text{Dividend per share}}{\text{Market price per share}} \times 100$

Dividend per share = unit per share x % of Dividend

From the following data, calculate dividend yield ratio

10,000 Equity shares of ₹100 each	10,00,000
Dividend paid during the year	20%
Market price per share	120

Sol:- Dividend yield ratio =

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

$$= \frac{20}{120} \times 100 = 16.67\%$$

(9) Return on Equity or Return on Equity shareholders funds:

This ratio is calculated to know the firms profitability from the perspective of shareholders

$$\text{Return on Equity} = \frac{\text{Net profit after Interest \& Tax}}{\text{shareholders' funds.}} \times 100$$

Shareholders' fund = Equity share capital + Preference share capital + share premium + Revenue Reserve + capital Reserve + Retained Earnings − Accumulated Losses

(or)

Shareholders' fund = Fixed Assets + current Assets − current & long term liabilities

Calculate Return on Equity shareholders' funds

Particulars	₹	Particulars	₹
current liabilities	340,000	Net profit after Interest & tax	440,000
Long term Debt (Deb.)	800,000	fixed Assets	1200,000
18% pref share capital	100,000	Trade Investment	100,000
Equity share capital	1100,000	Preliminary Exp.,	60,000
Reserves	60,000	underwriting commission	40,000
P&L A/c (Cr)	440,000	current Assets	100,000

Sol:- Net profit after Interest, Tax & preference Dividend

$= 4,40,000 - 18,000$ (pref. Dividend) $1,00,000 @ 18\%$

$\frac{1,00,000 \times 18}{100} = 18,000$

$= ₹ 4,40,000$

$= ₹ 4,22,000$

Equity shareholder's funds = Equity share capital + Reserves + P&L A/c (cr) − preliminary expenses − underwriting commission

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

$= ₹ 5,00,000$

Return on Equity shareholder's fund $= \frac{4,22,000}{5,00,000} \times 100$

$= 84.4\%$

Note:- closing Equity shareholder's funds have been used

Advantages and Disadvantages of Ratio Analysis:-

Advantages:-

→ Helps in forecasting & planning by performing trend analysis

→ Helps in estimating budget for the firm by analysing pervious trends

→ Helps in determining how efficiently a firm or an organisation is operating

→ Helps in comparison of 2 or more firms

→ Helps in determining both liquidity and long term solvency of the firm

→ provides significant information to users of accounting information regarding the performance of the business

Disadvantages:-

→ Financial statements seem to be complicated

→ several organisations work in various enterprises each possessing different environmental positions such factors are important that a comparison of 2 organisations from varied industries might be ambiguous

→ Ratio analysis illustrates the associations between prior data while users are more concerned about current & future data

→ Financial accounting data is influenced by views & hypotheses. Accounting criteria provide different accounting methods which reduces comparability and thus ratio analysis is less helpful in such circumstances.