ACCOUNTING RATIOS

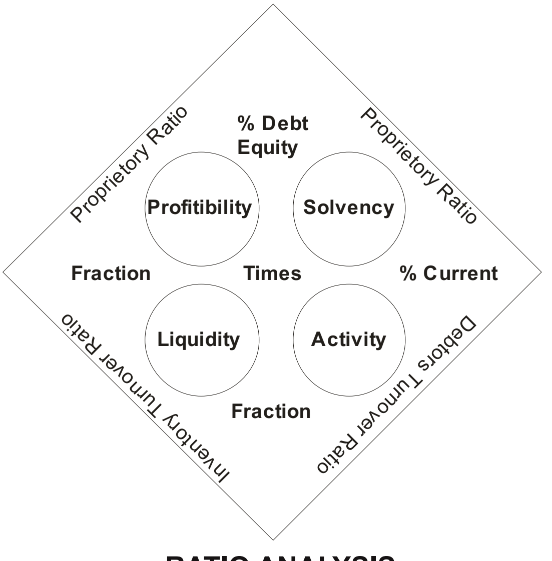
Points to Remember :

1. Loose tools and stores & spares will be excluded from inventories while calculating. Current ratio and inventories turn over ratio.
2. Provision for doubtful debt will be deducted from Trade receivables for calculating current and liquid ratios. But it will not deduct while calculating trade Receivables turnover ratio.
3. Non-trade Investment will be exclude from shareholder's funds and Capital employed and Total Assets for calculating solvency and Profitability ratios, and corresponding their income (i.e., interest on Non-trade Investment) will exelucls from Net Profit.
4. Operating cost and operating expenses are reperate concept shouldn't inter change.

Accounting Ratio: It is an arithmetical relationship between two accounting variables.

Ratio Analysis: It is a technique of analysis of financial statements to conduct a quantitative analysis of information in a company's financial statements.

"**Ratio analysis is a study of relationship among various financial factors in a business.**" –Myers



RATIO ANALYSIS

Expression of ratios: Ratios are expressed in following four ways:

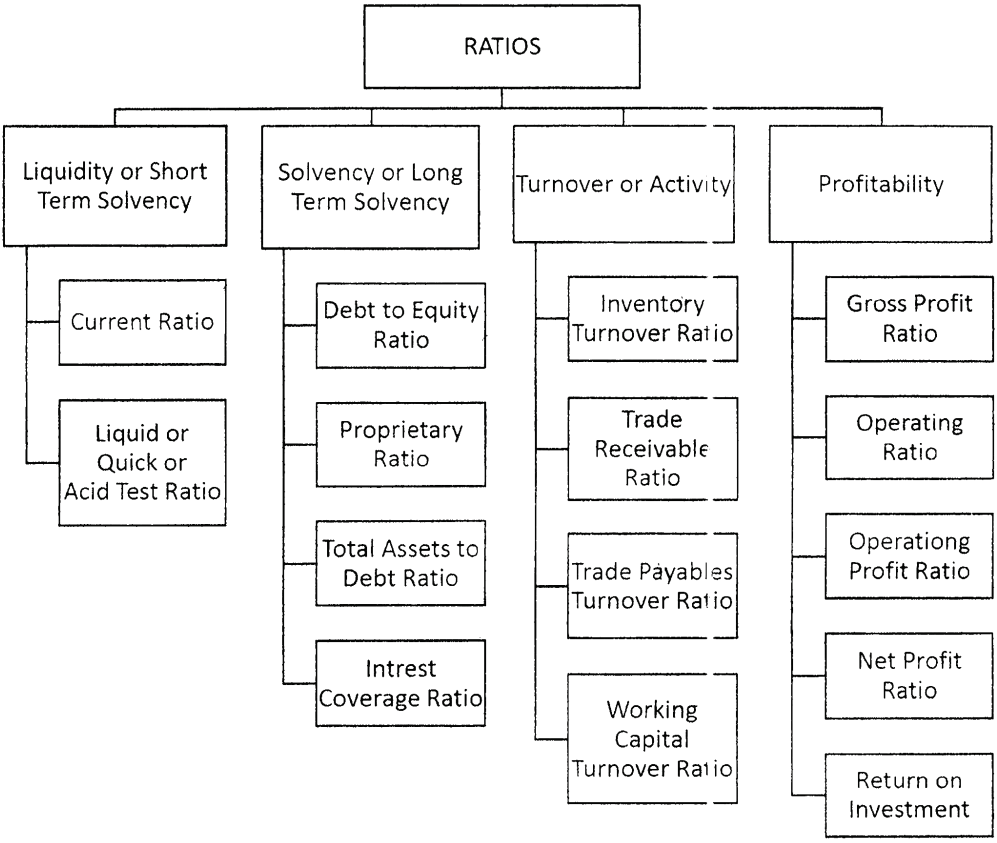
Pure Ratio Like 2:1. All liquidity and solvency ratios are expressed in pure form.

Percentage e.g. 15%. All profitability ratios are presented in percentage form.

Times Like 4 times. All turnover ratios and Interest Coverage Ratio are presented in this form.

Fraction like 3/4.

Classification or Types of Ratios:



Liquidity Ratios

Current Ratio

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

Liquid or Quick or Acid Test Ratio

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

Supporting Formulae

1. Current Assets = Current Investments (also known as Market able Securities or S.T. Investment)

   + Inventories (except Loose Tools & Stores and Spares)

   + Trade Receivables (Debtors and B.R.) Net after provision for bdd.

   + Cash and Cash Equivalents (Cash and Bank Balances)

   + Short Term Loans and Advances

   + Other Current Assets (Prepaid Expenses, Accrued Income & Advance Tax)

2. Current Liabilities = Short Term Borrowings (Bank Overdraft and Cash Credit)

   + Trade Payables (Creditors and B.P.)

   + OtherCurrent Liabilities (O/s Expenses, Income Received in Advance, Unpaid or Ui claimed Dividend)

   + Short Term Provisions (Provision for Tax, Proposed Dividend)

3. Liquid Assets = Current Assets

   - Inventory (closing)

   - Other Current assets (Prepaid Expenses, Accrued Inicome & Advance Tax)

4. Working Capital = Current Assets - Current Liabilities

5. Total Assets = Non-Current Assets + Current Assets

6. Total Liabilities = Non-Current Liabilities + Current Liabilities

7. Non-Current Assets = Fixed Assets (tangible and intangible)

+ Non-Current Investments

+ Long Term Loans & Advances (Capital Advances, Security Deposits)

8. Non-Current Liabilities = Long Term Loans(Debentures, Bank Loans, Bonds)

+ Long Term Provisions (Provision for employee benefit & Warranties)

9. Capital Employed = Shareholders Fund

+ Borrowed Fund (Non-Current Liabilities)

10. Capital Employed = Total Assets - Current Liabilities

= Non-Current Assets + Working Capital

11. Shareholders Fund = Share Capital

+ Reserves and Surplus

Non-Current Non Trade Investments

Shareholders Fund = Total Assets - Non Current Liabilities - Current / liabilities

(Note: Total Assets wll include only Non-Current TRADE Investments for Capital Employed)

Non Current: Investment will remain Non-Current TRADE Investments in Absence of any other information.

Solvency Ratios

• Debt - Equity Ratio

$$\text{Debt - Equity Ratio} = \frac{\text{Debt (Non Current Liabilities)}}{\text{Equility (Shareholders Fund)}}$$

• Proprietary Ratio

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

• Total Asset to Debt Ratio

$$\text{Total Asset to Debt Ratio} = \frac{\text{Total Assets}}{\text{Debt (Non Current Liabilities)}}$$

• Interest Coverage Ratio

$$\text{Interest Coverage Ratio} = \frac{\text{Profit BEFORE Interest, Tax and Dividend}}{\text{Interest on Long Term Loans}}$$

Activity or Turnover Ratios

- Working Capital Turnover Ratio

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

- Inventory Turnover Ratio

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

- Receivable Turnover Ratio

$$\text{Receivable Turnover Ratio} = \frac{\text{Net Credit Revenue from Operation}}{\text{Average Debt ors+Average BR.}}$$

$$\text{Receivable Turnover Ratio} = \frac{\text{12 months or 365 days or 52 weeks}}{\text{Debt or Average Collection Period}}$$

- Payable Turnover Ratio

$$\text{Payable Turnover Ratio} = \frac{\text{Net Credit Purchases}}{\text{Average Creditors + Average B.P.}}$$

$$\text{Payable Turnover Ratio} = \frac{\text{12 months or 365 days or 52 weeks}}{\text{Average Payment Period}}$$

Supporting Formulae

a) Revenue from Operation (Net Sales) = Total Revenue from Operation
Return of Revenue from Operation

b) Total Revenue from Operation = Cash Revenue from Operation
+ Credit Revenue from Operation

c) Net Credit Revenue from Operation = Credit Revenue from Operation
- Return of Revenue from Operation

d) Cost Of Revenue From Operation (COGS) = Opening Inventory
+ Net Purchases + Direct Expenses
- Closing Inventory

e) Cost Of Revenue From Operation (COGS) = Revenue From Operation
- Gross Profit

f) Cost Of Revenue From Operation (COGS) = Cost of Raw Material Consumed
+ Purchases of Stock in Trade
+ Change in Inventory of Finished Goods, WIP, Stock in Trade
+ Direct Expenses

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

h) Average Debtors = $\frac{\text{Opening Debtors + Closing Debtors}}{2}$

i) Average B.R. = $\frac{\text{Opening B.R. + Closing B.R.}}{2}$

j) Average Creditors = $\frac{\text{Opening Creditors + Closing Creditors}}{2}$

k) Average B.P. = $\frac{\text{Opening BP + Closing B. P.}}{2}$

l) Average Receivable = Average Debtors + Average B.R.

m) Average Payable = Average Creditors + Average B.P.

In absence of Information
• Debtors = Opening Debtors = Closing Debtors = Average = Debtors
• B.R. = Opening B.R. = Closing B.R. = Average B.R.
• Creditors = Opening Creditors = Closing Creditors = Average Creditors
• B.P. = Opening B.P. = Closing B.P. = Average B.P.

<u>Profitabiliy Ratio</u>

Gross Profit Ratio

Gross Profit Ratio = $\frac{\text{Groos Profit}}{\text{Revenue from Operation}} \times 100$

Net Profit Ratio

Net Profit Ratio = $\frac{\text{Net Profit After Tax}}{\text{Revenue from Operation}} \times 100$

Operating Ratio or Operating Cost Ratio

$$\text{Operating Ratio} = \frac{\text{Operating Cost}}{\text{Revenue from Operation}} \times 100$$

Operating Profit Ratio

$$\text{Operating Profit Ratio} = \frac{\text{Operating Profit}}{\text{Revenue from Operation}} \times 100$$

Return on Investmetn or Return on Capital employed

$$\text{ROI} = \frac{\text{Profit BEFORE Interest, Tax and Dividend}}{\text{Capital Employed}} \times 100$$

<u>Supporting Formulae</u>

- Net Profit = Gross Profit + Indirect Incomes - Indirect Expenses

  = Gros profit + Non-Operating Income – (Operating Expenses + Non-Operating Expenses)

  = Gross profit + Non-Operating Incomes – Operating Expenses - Non Operating Expenses

  = Gross profit – Operating Expeses + Non-Operating Incomes - Non Operating Expenses

  = (Gross profit – Operating Expenses) + Non-Operatin, Incomes, non-Operating Expenses
- Net Profit = Operating Profit + Non-Operating Incomes - Non Operating Expenses
- Indirect Expenses = Operating Expenses + Non-Operating Expenses
- Non-Operating expenses Example Interest Paid on loans a finance cost
- Operating Expenses = Office and Administrative Expenses

  + Selling and Distribution Expenses

  + General Expenses

  + Depreciation
- Operating Expenses = Employee Benefit Expenses + Other Operating Expenses
- Indirect Incomes (also known Non-Operating Incomes)

  Example: Interest Received on Investment
- Operating Cost = Cost of Revenue from Operation + Operating Expenses
- Operating Profit = Gross Profit - Operating Expenses

  = Revenue from Operation - Cost of Revenue - Operating Expenses

  = Revenue from Operation - (Cost of Revenue + Operating Expenses)
- Operating Profit = Revenue from Operation-Operating Cost
- Operating Profit = Net Profit - Non Operating Incomes + Non-Operating Expenses

RATIO ANALYSLS

Illustration -1

A firm had current Liabilities of 60,000.After the payment, Current ratio was 3.25:1. Determine current Assets & current ratio before the payment was made.

Sol. Let the current Assets after payment be x

$$\text{The current Ratio} = \frac{\text{Current Assets (CA)}}{\text{Current Liabilities (CL)}}$$

$$\frac{3.25}{1} = \frac{x}{60,000 - 20,000}$$

$$3.25 * 40,000 = x$$

$$x = 1,30,0000$$

Hence, Current Asset after payment = 1,30,000

$\boxed{\text{Current Asset before payment}}$ = (1,30,000 + 20,000)

= $\boxed{₹\ 1,50,000}$

$$\text{Current Ratio (Before payment)} = \frac{\text{CA before payment}}{\text{CL before payment}}$$

$$= \frac{1,50,000}{60,000}$$

$$\boxed{CR = \frac{2.5}{1}}$$

Illustration - 2

A Ltd. has a current ratio of 3.5:1 & quick ratio of 2:1If excess of current assets over quick assets represented by stock is 24000. Calculate current Assets & current liabilities.

Sol. $\text{Current ratio} = \frac{CA}{CL}$

$$\frac{3.5}{1} = \frac{CA}{CL}$$

$$CA = 3.5\ CL \qquad - \quad 1$$

$$\text{Quick ratio} = \frac{\text{QA (Quick Assets)}}{CL}$$

$$\frac{2}{1} = \frac{CA - Stock}{CL}$$

$$2CL = CA - 24,000$$

$$2CL + 24,000 = CA \qquad - \quad 2$$

From 1 & 2 , we get -

$$3.5\,CL = 2CL + 24000$$
$$3.5CL - 2CL = 24000$$
$$1.5\,CL = 24000$$
$$CL = \frac{24000}{1.5}$$
$$\boxed{CL = 16,000}$$
$$CA = 3.5\,CL$$
$$= 3.5 * 16,000$$
$$\boxed{CA = 56,000}$$

Illustration - 3

The current Ratio is 2:1. State giving reason which of the following transaction would improve , reduce & not change the current Ratio :-

(a) Payment of dividend
(b) purchase of goods on credit
© Redeemed 9% Debentures of Rs 100000 at a premium of 10%
(d) Sale of goods for Rs 25000 (cost rs 20,000)
(e) Issued Rs 100000 Equity shares to the vendors of Machinery.

Sol. (a) Payment of divident will reduce the current assets & current libilities by same amount. Hence, current ratio will IMPROVE

(b) Both current Assets & current Liabilities will Increase by same amount . Hence, Current ratio will REDUCE.

© Both current Assets & current Liabilities will Decrease by the same amount. Hence, Current ratio will IMPROVE

(d) Total current Assets will Increase by Rs 5000 (profit) leaving current liabilites unchanged . hence, Current ratio will IMPROVE.

(e) Both current Assets & current Liabilities are not affected . Hence No CHANGE in current ratio.

Illustration - 4

Calculate current ratio & Quick ratio from the following:

Total Debt	Rs		Rs
Toatal Assets	10,00,000	Long term Borrowings	4,00,000
Fixed Assets	1,500,000	Long term provision	2,00,000
Non- current investment	5,00,000	Inventories	1,70,000
Long term Loans Advances	1,00,000	Prepaid Expenses	30,000

Sol. Current ratio $= \frac{\text{Current Assets}}{\text{Current Liabilities}}$

Current Assets = Total Assets - Non current Assets

= Total Assets - (Fixed Asset + Non Current Invt.+ Long term Loans& Adv.)

= 1500,000 - (500 000 +10 0000 +100000)

$\boxed{CA = rs\ 800\ 000}$

Current Liabilities = Total debt - Non - current liiabilites

= Total Debt - (Long term Borrowings + Long term provisions)

$= 10,00,000 - (400,000 + 200,000)$

$\boxed{CL = RS\ 400'000}$

$\boxed{\text{Current Ratio}} = \frac{Rs\ 800000}{Rs\ 400,000} = \boxed{2:1}$

$\boxed{\text{Quick ratio}} = \frac{\text{Quick Assets}}{\text{Current Liablities}} = \frac{Rs\ 600,000}{RS\ 400,000} = \boxed{1:5}$

$\boxed{\text{Quick Assets}}$ = Current Assets - inventories - prepaid expenses

= Rs 800,000 - Rs 170,000 - Rs 30000

$\boxed{QA = Rs\ 600,000}$

Illustration - 5

Trade receivable turnover ratio is 4 times

Cost of revenue from operations is Rs 320000

Gross profit ratio is 20%

Closing trade receirables were Rs 10,000 more than

Trade receivables in the begining

Cash revenue from operations is 11/3 of credit revenue from operation

Calculate

(I) Opening trade Receivables

(II) Closing Trade Receivables

Sol. Let total revenue from operations be X

Total revenue from Operations = Cost of revenue from Operations + Gros profit

$X = 320000 + 20\%\ X$

$X = \frac{20}{100} X = 320000$

from

$X - \frac{1}{5} X = 320000$

$\frac{4}{5} X = 320000$

$X = 320000 \times \frac{5}{4}$

$\boxed{X = Rs\ 400,000}$ Total Revenue

Let credit revenue from operations be Y

Total ravenue from operations = Cash Revenue + Credit Revenue Operations

$400,000 = \frac{1}{3} y + y$

$400,000 = \frac{4}{3} y$

$y = 400,000 * \frac{3}{4}$

$\boxed{y = Rs\ 300,000}$ Credit Revenue

Trade Receivables Turnover Ratio $= \frac{\text{Credit revenue from Operations}}{\text{Avg. trade Receivables}}$

$4 = \frac{Rs\ 3,00,000}{\text{Average Trade receivables}}$

$$\text{Average Trade Receivables} = \frac{300,000}{4} = \text{Rs } 75,000$$

Let OP.Trade receivables be z

LetCI.Trade receivable be= z + 10,000

$$\text{Avg Trade receivables} = \frac{\text{OP T|R} + \text{CI} \times \text{T|R}}{2}$$

$$75000 = \frac{z+z+10000}{2}$$

$$150000 = 2z + 1000$$

$$2z = 140000$$

$\boxed{z = \text{Rs } 70,000}$ op. T|R

CI.. T|R = 70000+10000 = 80000

Illustration - 6

Calculate the values of opening & closing inventory from the foll. -

Total Sales Rs 200,,000

Sales Reluim Rs 12,500

Gros profit 1//4 on cost

Inventory Turnover ratio = 6 times

Inventory at thr beginning is 1:5 times more than the inventory at the end.

Sol. Net sales = total sales - sales reluin

= 200,000 - 12500

= Rs 187500

Gross Profit = 1/4 on cost

Let cost of revenue from operations = 100

$$\text{Gross profit} = \frac{1}{4} * 100 = 25$$

Revenue from operations = 100+25 = 125

If revenue from operations is 125, then cost is = 100

$$\text{If revenue from operations is 187500, then cost is} = \frac{100}{125} * 187500$$

$$= 150,000$$

$$\text{Inventory turnover ratio} = \frac{\text{Cost of revenue from operations}}{\text{Average inventory}}$$

$$6 = \frac{150000}{\text{Avg inventory}}$$

$$\text{Avg Inventory} = \frac{150000}{6} = \text{Rs } 25000$$

$$\text{Avg Inventory} = \frac{\text{op..inv} + \text{cl.inv}}{2}$$

op inv +cl inv = Avg inv. * 2

= 25000*2 = Rs 50,000

Let cl. inventory be x

then op. Inventory = x +1.5x = 2.5 x

Hence, x + 2.5x = 50,000

3.5x = 50,000

3.5

$\boxed{x = 14286}$ Closing inventory

op. Inv = 2.5x
= 2.5 * 14286
$\boxed{\text{op.Inv.} = 35715}$

Illustration 7:

The Following particulars are extracted from the Balance Sheet of XYZ1+d as at 31st Mar 2019 :-

Particulars	Rs Amount
Equity share capital	2,00,000
10% preference share capital	1,80,000
capital reserve	40,000
profit & loss balance	1,00,000
12% Debenlures	50,000
10% Morlgage loan	1,50,000
Current Liabilities	4,20,000
Current Assets	300,000

calculate the following ratio:

(a) Debt - EquityRatio
(b) Proprietary ratio
© Interest coverage ratio when Net profit after tax Rs 50,400 & rate of Income tax was 40%

Sol. (a) DEBT - EQUITY RATIO $= \frac{\text{Debt}}{\text{Equity}}$

Debt (long - term) = Debentures + Mortgage loan
= Rs 50,000 + 1,50,000
= 200,000

Equity / Share holder`s Funds = Eq share cap + pref. share cap + cap. Reserve + p& L balance
= 200,000 + 180,000 + 40,000 + 100,000
= Rs 520,000

Debt - Equity Ratio $= \frac{\text{Rs } 200,000}{\text{Rs } 520,000} = \frac{0.38}{1}$

(b) Proprielary Ratio $= \frac{\text{Shareholder`s funds}}{\text{Total Assets}}$
$= \frac{\text{Rs } 520,000}{\text{Rs } 720,000}$
= 0.722 or 72.2 %

Total Assets = Non current Assets + current Assets
= Rs 4,20,000 + Rs 300,000
= 720,000

© Interest Coverage Ratio $= \frac{\text{Net profit before interest \& tax}}{\text{Fixed interest charges}}$

Fixed interest Charges = 12% int. on Deb. of Rs 50,000
+ 10% Int. on mortgage loan of Rs 150,000

$$= \left(\frac{12}{100} * 50{,}000\right) + \left(\frac{10}{100} * 150{,}000\right)$$

= 6000+15000 = Rs 21000

Let net profit bfore tax = Rs 100

Tax = Rs 40

Net profit after tax = Rs 60

Net profit after Tax is Rs 60 when net profit before Tax = 100

Net profit after tax is Rs 50,400 Then net profit before Tax = $100 * \frac{50{,}400}{60}$

Rs = 84000

Net profit before tax = Rs 84000

Net Profit before int. & tax = Rs 84000+21000

= Rs 10,5000

$$\text{Interest Coverage Ratio} = \frac{\text{Rs } 105000}{\text{Rs } 21000} = 5 \text{ times}$$

Illustration - 8

Calculate Total Assets to Debt Ratio from foll. inf. -

Capital Employed	16,20,000	Equity share capital	8,00,000
Current Liabilities	180,000	8% Debentures	3,00,000
Fixed Asset (Gross)	9,50,000	Capital Reserve	2,40,000
Accumlaled Depreciation	1,50,000	Surplus i.e., balance in Statement of P&L - dr.)	20,000
Non - Current Investment	700,000		
Trade Receivables	2,50,00	Cash & Cash Equiralents	50,000

Sol. $$\text{Total Asset to debt Ratio} = \frac{\text{Total Assets}}{\text{Debt}}$$

Total Assets = Non - Current Assets + Current Assets

= [Fixed asset (Gross) (-) Accumulated Deprecialin + Non - current - Investment] + [Trade Receivable + cash & cash eq]

= [9,50,000 – 1,50,000 + 7,00,000] + [250,000 +50,000]

= 15,00,000 + 3,00,000

$\boxed{\text{Total assets = Rs 18,00,000}}$

(I) Calculate Return on investment if Net profit before tax for the year 2018-19 is Rs 7,83,600

(II) Calculate Return on investment for the yr. 2018-19 w.r.t opening Capitl Employed given -

(a) Reserves & Surplus

Surplus -

opening Balance	4,20,00	
Add Transfer from statement of profit &loss	9,72,00	13,92,000

Sol. $$\text{ROI} = \frac{\text{Net profit before int. \& Tax}}{\text{Capital Employed}} * 100$$

$$= \frac{\text{Rs } 10{,}11{,}600}{\text{Rs } 33.72{,}000} * 100 = 30\%$$

Calculation of Net profit before int & tax -

Net profit before Tax	Rs 7,83,600
Add int. on long term borrowings (15% 16,00,000)	Rs 2,40,000
Less Int. on Non-Trade Investments (10% of 1,20000)	Rs (12,000)
Net profit before int. & tax	Rs 10,11,600

Calculation of capital employed -

Asset side approach :-

Capital employed = Fixed Asset + Working capital

= Non current Assets (excluding Non-Trade investment)+ Current Assets- current liabilities

= 20,00,000 + 21,72,000 - 8,00,000

= Rs 33,72,000

Capital employed = shareholders fund + long term Debts

16,20,000 = 10,20,000 + long term Debts

$\boxed{\text{Long term Debts}}$ = 16,20,000 – 10,20,000

$\boxed{\text{Rs } 6{,}00{,}000}$

Shareholders funds = Eq share cap +cap raserve (–) Surplus Balance in Statement of P & L

= 8,00,000 + 2,40,000 - 20,000

= Rs 10,20,000

Total Asset to Debt ratio $= \dfrac{\text{Rs } 18{,}00{,}000}{\text{Rs } 6{,}00{,}000} = 3:1$

Illustration - 9

Following is the balance sheet of Davi Exports ltd. As at 31st march 2019

Particulars	Rs
I. EQUITY & LIBILITIESS	
1. Shareholder`s Funds	
(a) Share Capital	5,00,000
(b) Reserve & Surplus	13,92,000
2. Non- current Liabilities	
15% Long term Borrowings	16,00,000
3. Current Liabilities	8,00,000
Total	42,92,000
II ASSETS	Rs
1. Non - current Assets	
(a) Fixed Assets	18,00,000
(b) Non - Current investment	
(I) 10% Investment	2,00,000
(II) 10% Non- Trade investment	1,20,000
2. Current Assets	21,72,000
Total	42,92,000

Liabilities side Approach :-

Capital Employed = Share capital +Reserve + Surplus+ Non Current liabilities - Non - Trade Investment

$= 5,00,000 + 13,92,000 + 16,00,000 - 1,20,000$
$= \text{rs } 33,72,000$

II ROI = $\dfrac{\textbf{Net profit before int \& Tax}}{\text{Opening capital Employed}}$ *** 100**

Given - Net profit RS 9,72,000
Add int. on Long term Borrowing Rs 2,40,000
(15% 16,00,000)
Less int. on Non- Trade investment Rs (12,000)
(10% 1,20,000)
Net profit before int. & tax Rs 12,00,000

Calculation of capital employed :-
Asset side Approach :-
Capital Employed = Non Current Assets (excluding Non-trade investment) + Current Assets - Current Liabilities -Current Years Profit
= Rs (20,00,000 + 21,72,000 - 8,00,000,-9,72,000)
= Rs 24,00,000

Liabilities side Approach :-
Capital Employed = Share capital + Reserve & Surplus Current year`s profit + Non current Liabilities - Non - Trade Investments
= Rs (5,00,00 + 4,20,000+16,00,000 - 1,20,000)
= Rs 24,00,000

Hence, RoI $= \dfrac{\text{rs } 12,00,000}{\text{Rs } 24,00,000} * 100 = 50\%$

Illustration -10
Calculate Gross profit ratio from the foll -
Cash sales 25% Net sales
Average inventory Rs 1,60,000
Inventory Turnover ratio 8 times
Average Trade Receivables Rs 2,00,000
Trade recevables Turnover ratio 6 times

Sol. Gross profit ratio $= \dfrac{\text{Gross Profit}}{\text{Revenue from Operations}} * 100$

$= \dfrac{\text{Rs } 3,20,000}{16,00,000} * 100 = 20\%$

Cost of Revenue from Opertions :-
Inventory Turnover Ratio $= \dfrac{\text{COGS}}{\text{Average Inventory}}$

$8 = \dfrac{\text{COGS}}{\text{Rs } 1,60,000}$

COGS = Rs 1,60,000 * 8
$= \boxed{\text{Rs } 12,80,000}$

Credit sales :-
Trade Receivable Turnover Ratio $= \dfrac{\text{Net credit sales}}{\text{average trade receivables}}$

$$6 = \frac{\text{Net cr. sales}}{\text{Rs } 2,00,000}$$

Net cr. sales = 6* Rs 2,00,000

= $\boxed{\text{Rs } 12,00,000}$

If Cash sales = 25% net sales

Then Credit sales = 75% of net sales

Rs 12,00,000 = 75% Net sales

$$\text{Net sales} = \frac{\text{Rs } 12,00,000}{75\%} = \boxed{16,00,000}$$

Gross profit = [Revenue from operations (Net sales)] - [Cost of revenue from Operations (COGS)]

= Rs 16,00,000 - rs 12,80,000

= Rs 3,20,000

Illustration - 11

calculate Operating rato from the following

Operating cost rs 6,80,000

Operating expenses rs 80,000

Purchase of stock in trade	rs 6,06,000
change in invetories of stock in trade	rs 15,000
Employes benefits Expenses	rs 9,000
Selling & Distribution Expenses	rs 58,000
Loss on sale of fixed Asset	rs 12,000
Gross profit Ratio	- 25%

Administrative Expenses ₹ 22,000

$$\text{Sol. Operating Ratio} = \frac{\text{Cost of revenue from operations} + \text{Operating Expenses}}{\text{Revenue from opertaion}} * 100$$

$$= \frac{\text{rs } 6,00,000 + \text{rs } 80,000}{\text{rs } 8,00,000} * 100 = 85\%$$

Cost of revenue from Operation = operating cost - operating expenses

= rs 6,80,000 - rs 80,000

= rs 6,00,000

Cost of revenue from operation = Purchase of stock in Trade + Change in inventories + stock in stock + Employe Benefit Expenses

= rs 6,06,000 - rs 15,000 + rs 9000

= rs 6,00,000

Operating Expenses = Given rs 80,000

Otherwise Operating Exp. = Administrative Expenses + selling & Distribution Expenses

= Rs 22000+ rs 58000

= rs 80,000

(a) Cost of Revenue from operations -

Let Revenue from Operations be rs 100

and If Gross profit = rs 25

Then, Cost of revenue fom operation = rs 75

If cost of revenue from operation is rs 75 Revenue fom operations rs 100

If cost of revenue from operation is rs 6,00,000

Then revenue from Operation = rs 6,00,00, * $\frac{100}{\text{rs } 75}$

= 8,00,000

Illustration - 12

Ravenue from operation 8,00,000

Gross profit ratio 25%

Operating ratio 90%

Non - Operating Expenses rs 4000

Non - Operating income rs 44000

calculate Net profit ratio:

Sol. Net profit ratio = $\frac{\text{Net Profit}}{\text{Revenue from operations}}$ * 100

= $\frac{\text{rs } 1,20,000}{\text{rs } 8,00,000}$ *100 = 15%

Calculation of Net profit

Operating profit ratio = 100% Operating Ratio

= 100% − 90%

= 10%

Operating profit Ratio = $\frac{\text{Operating profit} \quad *100}{\text{Revenue from Operations}}$

$$10 = \frac{\text{operating Profit}}{8,00,000} \times 100$$

Operating profit = $\frac{\text{rs } 8,00,0000 * 10}{100}$ = 80,000

Net profit = Operating profit +Non operating Income - Non - Operating Expenses

= rs 80,000+rs 44,000 - rs 4000

rs 1,20,000

RATIO ANALYSIS

MCQ

1. Which ratio measures the firm's ability to meet its short term - obligations in time ?

(a) Profilabilily ratios
(b) liquidily ratios
© Activity ratios
(d) Solvency ratios

2. Liquid Assets = -------------------

(a) Current Assets + Inventory
(b) Current Assets - Inventory
© Current Assets - (Inventory + Debtors)
(d) Current Assets - (Inventory + prepaid Expenses)

3. A co.extends credit terms of 45 days to its customers its credit collection would be considered poor if it average collection period was -

(a) 30 days
(b) 52 days
© 41 days
(d) 36 days

4. If 365 if divided by inventory turnover ratio, it becomes a measure of -

(a) Revenue from operations efficiency
(b) Average collection period
(c)Average age of the invetory
(d) revenue from operations turnover

5. The _______ Indicates the percentage of each sales rupee remainig after the firm has paid cost of goods sold

(a) Net profit Margin
(b) Gross profit Margin
© Operating Profit margin
(d) Earning Available to Equity shre holders

6. The ideal ratio between total long - term funds & Total long- term loans is-

(a) 2:1
(b) 3:1
© 1:1
(d) 4:1

7. 100- operating profit ratio = ________

(a) Gross profit ratio
(b) Operating net profit ratio
© Operating ratio
(d) Net profit ratio

8. What is the limitation of ratio analysis?
(a) Price level changes not considered
(b) window dressing
(c) persnol Bias
(d) All of the above

9. The technique of converting figures into percentage in some common base is called _
(a) Common Size statement Analysis
(b) Comparative statement Analysis
(c) Ratio Analysis
(d) None

10. Asset while calculating current ratio ?
(a) Trade Receivable
(b) Current Investment
(c) Loose tools
(d) Cash Equivqlent

11. When will discharge of bills payable result into increase in current ratio-_
(a) If Current Ratio is 1:1
(b) If current Ratio is 2:1
© If current rtio is 0:8:1
(d) If current ratio is 1.5 : 1.5

12. If revenue from operation Rs 1,60,000 & Gross profit is rs 40,000 : Then Gross profit Ratio will be -
(a) 25%
(b) 30%
(c) 40%
(d) 45%

13. Which formula is correct for computing operating ratio -
(a) (Revenue frpm operations * 100) ÷ Operating cost
(b) (Opening cost *100) - cost of revenue from operation
(c)(Operating cost *100) - Revenue from operations
(d) None of These

14. If revenue from operation rs 900,000 Gross profit 25% on cost, operating Expenses rs 90,000 Then operatin Ratio Will be -
(a) 10%
(b) 70%
(c) 50%
(d) 100%

15. Calculate proprietary ratio . If share capital rs 5,00,000: Non-current Assets s 22,00,000: Reserves & Surplus rs 3,00,000 current Assets rs 10,00,00

(a) 100%
(b) 70%
(c) 40%
(d) 25%

16. A transaction involving a decrease in Debt - Equity ratio & Increase in current ratio is -
(a) Issue of debentures against the purchase of fixed assets
(b) Redemption of preference shares for cash
(c) Issues of shares for cash
(d) Issues of Debetures for cash

17. Simran Ltd. has a proprietary ratio of 25% to maintain this ratio at 30% , management may -
(a) Increase Equity
(b) Reduce Debt
(c)Increase Equity & Increase Debt
(d) Increase Equity & reduce Debt

18. A transaction invdving a decrease in both current ratio & Quick ratio is -
(a) Sale of Non-current Assets & fixed Assets
(b) Sale of stock - in- Trade at loss
(c)Cash payment of a current liability
(d) Purchase of stock in trade on credit

19. Working capital is the
(a) Difference between current Assets & Fixed Assets
(b) Difference between current Assets & current Liabilities
(c)Cash and bank balance
(d) Capital Borrowed from the banks

20. Cost of revenue from operations -
(a) Purchase - closing inventory
(b) Revenue from operations - closing inventory
(c)Revenue from operations - Gross profit
(d) revenue from operations - Net profit

21. State whether the following statement are true / false -
(a) In calculating Debt - Equity ratio , all external debts atre Considered
(b) In Debt to total Assets Ratio, debt include only long term borrowings & long term provision.
(c)Debit balance is surplus, i.e. balance in statement of profit & loss is not deducted to calulated share holder funds to calculate Debt - Equity ratio.
(d) Loose tools spare parts are excluded to calculate working capital while calculating working capital turnover ratio .
(e) The formula for Trade payables turnover ratio is net credit purchases / Average trae receivables.

22. Fill in the blanks with appropriate words -

(a) __________ establishes the no. of times amount invested to trade recevables is turned over in a year in relation to revenue from operation

(b) Gross profit + Other income – __________ = Net profit

© _____________ & Operating profit ratio are complimentary to each other

(d) trade payable is the sum total of creditors & _________

(e) Debit balnce is surplus i.e, Balnce in statement of profit & loss is deducted to calculate _______ to calculate Debt - Equity ratio .

Exercise

1. Calculate current ratio from the foll. Inf-

Particular		Particular	
Total Assets	3,00,000	Non current Liabilities	1,90,000
FA (Tangible)	100000	Non current investment	1,60,000
Shareholder`s funds	90,000		

Hint - CA = TA-FA-Non CI
CL = TA - Shareholder`s funds - Non current liabilities

2. Calculate current ratio -

Working capital - rs ,150,000

Total Liabilities other then shareholder`s funds) - rs 3,8,5,000

Long term debits - rs 2,85,00

3.Working capital rs 36000

Current ratio 2:8:1

Inventory rs 16000

Calculate current Assets, current Liabilities & Quick ratio

(Hint = WC = CA-CL
Quick Assets = Current Asset - Inventory)

4. Calculate working capital turnover ratio from the following information -

Revenue from operations rs 1200,000

Current Assets rs 500,000

Total Assets rs 10,00,000

Non - current Liabilities rs 4,00,000

Shareholder`s funds rs 4,00,000

(Hint - Current Assets = Total Assets - Non-CL - Sharehoder`s fund

5. Calculate Trade payables Turnover ratio -

op, sundry Creditors	rs 80,000	Closing sundry creditors	rs 90,000
op, Bill Payable	rs 10,000	CL Bill payable	rs 20,000
purchase	rs 10,00,000	cash purchase	rs 3,28,000
purchase returns	rs 72,000		

Hint - Net cr. purchas = purchase - PR - cash purchase

6. Calculate inventory turnover ratio from the folll inf-

Net sales rs 40,000

Average inventory rs 5500

Gross loss on sales is 10%

(Hint - Cost of revenue from operation = Net sales + Gross loss)

7. Calculate proprielary ratio from the foll. inf-

Long terms Debt rs 32,00,000
Working Capital rs 4,00,000
Current Assets rs 20,00,000
shareholder`s funt 18,00,000
Reserves & surplus rs 2,00,000

(Hint - Total Assets = shareholder`s funds + Long term Debt + Current Liab.)

8. Calculated Gross profit ratio from the foll-

Cash sales = 25% total sales
= Purchase = rs 6,90,000
credit sales = rs 6,00,000

Excess of closing inventory over opening inventory = rs 50,000

(Hint- COGS = Purchase + change in inventories
Purchase - Excess of closing inventory pver opening inventory)

9. Calculate operating ratio from the fall-

Revenue from operation = rs 8,00,000
Gp = 25% Cost
Setting Expense = 1,35,000
Administraive Expense = rs 93,000

10. Calculate operating profit Ratio from the following:

Revenue from Operations	47,99,600
COGS	24,40,200
Weges	50,98,00
Office & Administrative Expenses	4,50,400
Setting & Distribution expenses	2,51,200
interest on loan	30,000
Loss by theft	18,000
Income from investment	60,000

(Hint- operating profit = Revenue from oprations - COGS -Office Administrative Expenses - selling & Distribute Expense

11. Gross profit ratio of a company was 25% . Its cash Sales were rs2,00,000 & credit sales were 90% of the total sale If the indirect expenses of the company were rs 20,000, Calculate - Net profit Ratio.

(Hint - Net profit = Gross Profit - Intired Expenses)

12.Calculate Total Asset to Debt Ratio -

Fixed Aset (Gross)	10,00,000
Accumulated Depreciation	500,000
Non - current investment	1,50,000
Long term loans & Advance	1,00,000
Current Assets	4,50,000
Total Debt	75,000
Sundry Creditors	25,000
Expenses Payable	25,000
Bill payable	25,000
Short term bank loan	50,000

13. Calculate (a) Net Profit Ratio
(b) Debt - Equity Ratio
(c) Quick Ratio

Given Information -

Paid up capital	20,00,000
Capital reserve	20,00,000
9% Debentures	8,00,000
Net Revenue from Opertions	14,00,000
Gross profit	8,00,000
indirect Expenses	2,00,000
Current Assest	4,00,000
Current Liabilities	3,00,000
Opening Inventory	50,000

Closing inventory - 20% more than opening inventory

14. Calculate RoI from the foll -
Net profit after tax = rs 650,000 ; 12.5% Convertible Debent = rs 8,00,000 ; Income Tax = 50% ; Fixed Assets at cost = 24,60,000 ; Depreciation Reserve = rs 4,60,000 ; Current Asset = rs 15,00,000 ; Current Libilities = rs 7,00,000

15. Calculate (a) Gross profit ratio
(b) Working capital Turnover ratio
(c) Proprietary ratio

Information-

Paid up capital	8,00,000
current Assets	5,00,000
Credit Revenue from operation	3,00,000
Cash revenue from operations	75% of credit sales
9% Debentures	3,40,000
Current Liabilities	2,90,000
Cost of revenue From operation	6,80,000

16. A company has a loan rs 20,00,000 as part of its capital Employed. The interest payable on loan is 15% &the RoI of the company is 25% The rate of income Tax is 40%. What is the gain to the shareholders due to the loan raised by the company?
(Net Gain = Net profit before int. & - Interest - Tax tp shareholders)

Things to Remember

- What is a Ratio?

  It is an arithmetical relationship between 2 variables.
- What is Accounting Ratio?

  It is an arithmetical relationship between 2 accounting variables.
- In how many ways a Ratio may be expressed
  1. Pure
  2. Times
  3. %
  4. Fraction
- Give two objectives of Ratio Analysis
  1. To find out the weak areas of business
  2. To help in formulation of plans for future
- List two uses of Accounting Ratios
  1. To Analyse the financial statements
  2. To simplify the Accounting Data
- Write two limitations of Accounting Ratios
  1. Ignoring Price level changes
  2. Ignoring qualitative aspect
- Liquidity Ratios are also known as short term solvency Ratios
- List two Ratios included in liquidity Ratios

  2. Current Ratio

  3. Quick Ratio
- Current Ratio is also known as – working capital Ratio
- Quick Ratio is also called as—Acid test Ratio or Liquid Ratio

  Write formula for working capital Ratio

  Working capital Ratio = $\frac{Current\ Assets}{Current\ Liabilities}$
- What are current Assets?

  Assets which may be converted into cash or cash equivalent within, 12 months from the date of Balance sheet or operating cycle.

- What are current liabilities?

  Liabilities which are to be paid within 12 months from the date of Balance sheet or operating cycle.

- Give examples of current liabilities?

  Short term borrowing(including Bank overdraft), trade payables(Bills payables and sundry creditors),other current liabilities.

- What are liquid Assets?

  These assets which can be converted into cash or cash equivalents within short period of time.

- Give examples of Liquid Assets

  Current investments, trade receivables, cash and cash equivalents, short term loans and advances.

- What do you mean by solvency Ratios?

  Those ratios which show whether the business will be able to pay its long term commitment/ payments on time.

- How can we calculate debt?

  Debt = long term borrowings

  +long term provisions

  OR

  = Total Debt-current liabilities

- How to deal with debit balance of statement of P&L account?

  It is to be deducted from equity /shareholders' funds

- What are long term provisions?

  Provisions for those liabilities to be paid after 12 months from the date of balance sheet or after operating cycle.

- Give examples of long term provisions?

  Employees benefit expenses like provision for gratuity, provision for warranty.

- Activity Ratios are also known as performance Ratios/ turnover Ratios.

- How to deal with change in inventory Add change in inventory if opening inventory>closing inventory.

  Subtract change in inventory if opening inventory<closing inventory.

- Give a reason for ↑ or ↓ in gross profit Ratio.

  ↑ Higher selling price with constant cost of revenue from operation results in in gross profit ratio.

  ↓ Higher cost of revenue from operation with constant selling price results in gross profit ratio.

- Give examples of non-operating incomes: interest received, dividend received, profit on sale of fixed assets.
- Give examples of non-operating expenses: Interest on long term loans, loss on sale of non-current assets.