8. RATIO ANALYSIS

ASSIGNMENT PROBLEMS

PROBLEM NO: 1

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}} = 2, \text{ i.e } 2:1$$

S.No.	Situation	Improve/ Decline/ No Change	Reason
i)	Payment of Current liability	Current Ratio will improve	Let us assume CA is Rs. 2 lakhs & CL is1 lakh. If payment of Current Liability = Rs.10,000 then, CA = 1,90,000, CL= 90,000. Current Ratio = $\frac{1,90,000}{90,000} = 2.11:1$. When Current Ratio is 2:1, Payment of Current liability will reduce the same amount in the numerator and denominator. Hence, the ratio will improve.
ii)	Purchase of Fixed Assets by cash	Current Ratio will decline	Since the cash being a current asset converted into fixed asset, current assets reduced, thus current ratio will fall.
iii)	Cash collected from Customers	Current Ratio will not change	Cash will increase and Debtors will reduce. Hence No Change in Current Asset.
iv)	Bills Receivable dishonoured	Current Ratio will not change	Bills Receivable will come down and debtors will increase. Hence no change in Current Assets.
v)	Issue of New Shares	Current Ratio will improve	As Cash will increase, Current Assets will increase and current ratio will increase.

PROBLEM NO: 2

Step 1: Computation of stock turnover ratio and stock velocity:

$$\text{Stock turnover ratio} = \frac{\text{COGS}}{\text{Avg. Stock}} = \frac{\text{Sales - GP}}{\text{Avg. Stock}} = \frac{3,00,000}{60,000} = 5 \text{ times}$$

$$\text{Stock velocity} = \frac{360 \text{ days}}{5} = 72 \text{ days}$$

Step 2: Computation of debtors turnover ratio and debtors velocity:

$$\text{Debtors turnover ratio} = \frac{\text{Credit Sales}}{\text{Cl. A/c Receivables}} = \frac{2,10,000}{20,000 + 15,000} = 6 \text{ times}$$

$$\text{Debtors velocity} = \frac{360 \text{ days}}{6 \text{ times}} = 60 \text{ days}$$

Step 3: Calculation of operating cycle:

Operating cycle period = Inventory velocity + Debtors velocity

= 72 days + 60 days = 132 days

Significance:

a) The operating cycle may be defined as no. of days it is taking term procurement of goods to realization from debtors in case of credit sales.

b) The operating cycle of the given firm indicates that it is taking 132 days to convert the Finished Good into cash.

c) The operating cycle of the above firm should be compared either with the pre-determined standard or with the operating cycle of the similar firm / firms in the same industry and then it should be concluded that whether our operating cycle is good or bad.

PROBLEM NO: 3

WORKING NOTES:

1. Current assets and Current liabilities computation:

$$\frac{\text{Current assets}}{\text{Current liabilities}} = \frac{2.5}{1}$$

Or Current assets = 2.5 Current liabilities

Now Working capital = Current assets - Current liabilities

Or 1.5 Current liabilities = Rs. 2,40,000

∴ Current liabilities = Rs. 1,60,000

So, Current assets = Rs. 1,60,000 x 2.5 = Rs. 4,00,000

2. Computation of stock

$$\text{Liquid ratio} = \frac{\text{Liquid assets}}{\text{Current liabilities}}$$

$$\text{Or } 1.5 = \frac{\text{Current assets} - \text{Inventories}}{\text{Rs.1,60,000}}$$

Or Inventories = Rs. 4,00,000 - Rs, 2,40,000

Or Stock = Rs. 1,60,000

3. Computation of Proprietary fund, Fixed assets, Capital and Sundry creditors

$$\text{Fixed Asset to Proprietary ratio} = \frac{\text{Fixed assets}}{\text{Proprietary fund}} = 0.75$$

∴ Fixed assets = 0.75 Proprietary fund (PF) [FA + NWC = PF or NWC = PF - FA (i.e. 75 PF)] and Net working capital (NWC) = 0.25 Proprietary fund

Or Rs. 2,40,000/0.25 = Proprietary fund

Or Proprietary fund = Rs. 9,60,000

And Fixed assets = 0.75 proprietary fund = 0.75 x Rs. 9,60,000 = Rs. 7,20,000

Capital = Proprietary fund - Reserves & Reserves & Surplus = Rs. 9,60,000 - Rs. 1,60,000 = Rs. 8,00,000

Sundry creditors = (Current liabilities - Bank overdraft) = (Rs. 1,60,000 - Rs. 40,000) = Rs. 1,20,000

Balance Sheet

Liabilities	Rs.	Assets	Rs.
Capital	8,00,000	Fixed assets	7,20,000
Reserves & Surplus	1,60,000	Stock	1,60,000
Bank overdraft	40,000	Current assets	2,40,000
Sundry creditors	1,20,000		
	11,20,000		**11,20,000**

PROBLEM NO: 4

Gross Profit Rs. 54,000

Gross Profit Margin 20%

$$\therefore \text{Sales} = \frac{\text{Gross Profit}}{\text{Gross Profit Margin}} = \text{Rs. } 54,000/0.20 = \text{Rs. } 2,70,000$$

Credit Sales to Total Sales = 80%

∴ Credit Sales = Rs. 2,70,000 x 0.80= Rs. 2,16,000

Total Assets Turnover = 0.3 times

$\therefore$ Total Assets = $\frac{\text{Sales}}{\text{Total Assests Turnover}} = \frac{\text{Rs. 2,70,000}}{0.3}$ = Rs. 9,00,000

Sales - Gross Profit = COGS

$\therefore$ COGS = Rs. 2,70,000 - 54,000 = Rs. 2,16,000

Inventory turnover = 4 times

Inventory = $\frac{\text{COGS}}{\text{Inventory turnover}} = \frac{2,16,000}{4}$ = Rs. 54,000

Average collection Period = 20 Days.

$\therefore$ Debtors turnover = $\frac{360}{\text{Average Collection Period}}$ = 360/20=18

$\therefore$ Debtors = $\frac{\text{Credit Sales}}{\text{Debtors turnover}} = \frac{2,16,000}{18}$ = Rs. 12,000

Current ratio = 1.8

1.8 = $\frac{\text{Debtors} + \text{Inventory} + \text{Cash (Current Assets)}}{\text{Creditors (Current Liabilities)}}$

1.8 Creditors = (Rs. 12,000 + Rs. 54,000+Cash)

1.8 Creditors = Rs. 66,000 + Cash ----------(i)

Long-term Debt to Equity = 40%

Shareholders' Funds (Equity) = Rs. 6,00,000

$\therefore$ Long-term Debt = Rs. 6,00,000 x 40% = Rs. 2,40,000

Creditors = Rs. 9,00,000 - (6,00,000+2,40,000) = Rs. 60,000

$\therefore$ Cash = (Rs. 60,000 x 1.8) - Rs. 66,000 = Rs. 42,000 [From equation (i)]

Balance Sheet

Liabilities	Amount (Rs.)	Assets	Amount (Rs.)
Creditors	60,000	Cash	42,000
Long-term debt	2,40,000	Debtors	12,000
Shareholders' funds	6,00,000	Inventory	54,000
		Fixed Assets (Balancing figure)	7,92,000
	9,00,000		9,00,000

PROBLEM NO: 5

a) Preparation of Balance Sheet of a Company

Working Notes:

i) Cost of Goods Sold = Sales - Gross Profit (= 25% of Sales)
= Rs. 30,00,000 - Rs. 7,50,000 = Rs. 22,50,000

ii) Closing Stock = Cost of Goods Sold / Stock Turnover
= Rs. 22,50,000/6 = Rs. 3,75,000

iii) Fixed Assets = Cost of Goods Sold / Fixed Assets Turnover
= Rs. 22,50,000/1.5 = Rs. 15,00,000

iv) Current Assets = Current Ratio = 1.5 and Liquid Ratio = 1
Stock = 1.5 - 1 = 0.5
Current Assets = Amount of Stock x 1.5/0.5 = Rs. 3,75,000 x 1.5/0.5 = Rs. 11,25,000

v) Liquid Assets (Debtors and Cash) = Current Assets – Stock

= Rs. 11,25,000 - Rs. 3,75,000 = Rs. 7,50,000

vi) Debtors = Sales x Debtors Collection period /12 = Rs. 30,00,000 x 2 /12 = Rs. 5,00,000

vii) Cash = Liquid Assets - Debtors = Rs. 7,50,000 - Rs. 5,00,000 = Rs. 2,50,000

viii) Net worth = Fixed Assets /1.2 = Rs. 15,00,000/1.2 = Rs. 12,50,000

ix) Reserves and Surplus

Reserves and Share Capital = 0.6 + 1 = 1.6

Reserves and Surplus = Rs. 12,50,000 x 0.6/1.6 = Rs. 4,68,750

x) Share Capital = Net worth - Reserves and Surplus = Rs. 12,50,000 - Rs. 4,68,750 = Rs. 7,81,250

xi) Current Liabilities = Current Assets/ Current Ratio = Rs. 11,25,000/1.5 = Rs. 7,50,000

xii) Long-term Debts

Capital Gearing Ratio = Long-term Debts / Equity Shareholders' Fund

Long-term Debts = Rs. 12,50,000 x 0.5 = Rs. 6,25,000

Balance Sheet of a Company

Liabilities	Amount (Rs.)	Assets	Amount (Rs.)
Equity Share Capital	7,81,250	Fixed Assets	15,00,000
Reserves and Surplus	4,68,750	Current Assets	
Long-term debts	6,25,000	Stock	3,75,000
		Debtors	5,00,000
		Cash	2,50,000
	26,25,000		**26,25,000**

b) Statement Showing Working Capital Requirement

A.	**Current Assets**		
	Stock	3,75,000	
	Debtors	5,00,000	
	Cash	2,50,000	11,25,000
B.	Current Liabilities		7,50,000
	Working Capital before Provision (A - B)		3,75,000
Add:	Provision for Contingencies @ 10% of Working Capital including Provision i.e. 1/9th of Working Capital before Provision: 3,75,000 x 1/9		41,667
	Working Capital Requirement including Provision		4,16,667

PROBLEM NO: 6

Balance Sheet of XYZ

Liabilities	Rs. (in lakhs)	Assets	Rs. (in lakhs)
Capital	50	Plant & Machinery	125
Reserves & Surplus (bal fig.)	78	Other Fixed Assets	75
Bank Credit	144	Stock	75
Current Liabilities	72	Cash	5
		Debtors	64
	344		**344**

WORKING NOTE-1: CLOSING STOCK:

Sales = 500L

Net Sales = Sales - Sales Returns

= 500L - 20%

= 400L

G.P% = 25%

COGS = (100-25) % = 75%

COGS = 400 x 75/100 = 300 Lakhs

Inventory T.O Ratio = 4

$$\frac{\text{COGS}}{\text{Closing Stock}} = 4$$

Closing Stock = $\frac{300L}{4} = 75L$

WORKING NOTE-2: CASH:

Cash to Inventory = 1:15

$$\frac{\text{Cash}}{\text{Closing Stock}} = \frac{1}{15}$$

Cash = $\frac{75L}{15} = 5L$

WORKING NOTE-3: F. ASSETS:

$$\frac{\text{Sales}}{\text{Fixed Assets}} = 2$$

Fixed Assets = $\frac{400L}{2} = 200L$

Plant & Machinery = 125L

∴ Other Fixed Assets = 75L

WORKING NOTE-4: DEBTORS:

Avg. Collection Period = 73

Annual Credit Sales = 80% of net sales = 80% of 400L = 320L

Debtors = $\frac{\text{Avg. Collection Period X Annual Credit Sales}}{365} = \frac{73 \times 320}{365} = 64L$

WORKING NOTE-5: CURRENT LIABILITIES:

$$\frac{\text{Current Assets}}{\text{Current Liabilities}} = 2$$

Current Assets = Stock + Cash + Debtors

= 75L + 5L + 64L = 144L

∴ Current Liabilities = $\frac{\text{Current Assets}}{2} = \frac{144}{2} = 72L$

Trade Credit / Current Liabilities = 72L

WORKING NOTE-6: BANK CREDIT:

$$\frac{\text{Bank Credit}}{\text{Trade Credit}} = 2$$

Bank Credit = 2 x 72L = 144L

PROBLEM NO: 7

a) G.P. ratio = $\frac{\text{Gross Profit}}{\text{Sales}}$ = 25%

Sales = $\frac{\text{Gross Profit}}{25} \times 100 = \frac{\text{Rs. 8,00,000}}{25} \times 100$ = Rs. 32,00,000

b) Cost of Sales = Sales - Gross profit = Rs. 32,00,000 - Rs. 8,00,000 = Rs. 24,00,000

c) Receivable Turnover $= \frac{\text{Sales}}{\text{Receivables}} = 4$

$= \text{Receivables} = \frac{\text{Sales}}{4} = \frac{\text{Rs. 32,00,000}}{4} = \text{Rs. 8,00,000}$

d) Fixed Assets Turnover $= \frac{\text{Cost of Sales}}{\text{Fixed Assets}} = 8$

Fixed Assets $= \frac{\text{Cost of Sales}}{8} = \frac{\text{Rs. 24,00,000}}{8} = \text{Rs. 3,00,000}$

e) Inventory Turnover $= \frac{\text{Cost of Sales}}{\text{Average Stock}} = 8$

Average Stock $= \frac{\text{Cost of Sales}}{8} = \frac{\text{Rs. 24,00,000}}{8} = \text{Rs. 3,00,000}$

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

Average Stock $= \frac{\text{Opening Stock} + \text{Opening Stock} + \text{Rs. 20,000}}{2}$

Average Stock = Opening Stock + Rs. 10,000

Opening Stock = Average Stock - Rs. 10,000

= Rs. 3,00,000 - Rs.10,000 = Rs. 2,90,000

Closing Stock = Opening Stock + Rs. 20,000

= Rs. 2,90,000 + Rs. 20,000 = Rs. 3,10,000

f) Payable Turnover $= \frac{\text{Purchases}}{\text{Payables}} = 6$

Purchases = Cost of Sales + Increase in Stock

= Rs. 24,00,000 + Rs. 20,000 = Rs. 24,20,000

Payables $= \frac{\text{Purchases}}{6} = \frac{\text{Rs. 24,20,000}}{6} = \text{Rs. 4,03,333}$

g) Capital Turnover $= \frac{\text{Cost of Sales}}{\text{Capital Employed}} = 2$

Capital Employed $= \frac{\text{Cost of Sales}}{2} = \frac{\text{Rs. 24,00,000}}{2} = \text{Rs. 12,00,000}$

h) Share Capital = Capital Employed - Reserves & Surplus

= Rs. 12,00,000 - Rs. 2,00,000 = Rs. 10,00,000

Balance Sheet of Tirupati Ltd as on……

Liabilities	Amount (Rs.)	Assets	Amount (Rs.)
Share Capital	10,00,000	Fixed Assets	3,00,000
Reserve & Surplus	2,00,000	Closing Inventories	3,10,000
Payables	4,03,333	Receivables	8,00,000
		Other Current Assets	1,93,333
	16,03,333		16,03,333

(Fixed Asset turnover, inventory turnover capital turnover is calculated on cost of sales)

PROBLEM NO: 8

R.O.E = [R.O. I + (R.O.I - r) x D/E] x (1-t)

= [0.2 + (0.20 - 0.10) x 0.60] x (1-0.4)

= [0.2 +0.06] x 0.60 = 0.1560

R.O.E = 0.1560 x 100 = 15.60 %

PROBLEM NO: 9

Particulars	2002	2003
1. Fixed Assets turnover ratio = $\frac{\text{Turnover}}{\text{Fixed Assets}}$	$\frac{4,000}{2,450}$ = 1.63	$\frac{5,000}{2,450}$ = 2.04
2. Stock turnover ratio = $\frac{\text{Sales}}{\text{Average Stock}}$	$\frac{4,000}{1800+1900\ /2}$ = 2.16	$\frac{5,000}{1900+2400\ /2}$ = 2.33
3. Debtors Turnover ratio = $\frac{\text{Sales (incl. excise \& sales tax)}}{\text{Avg. Debtors}}$	$\frac{4000\times120\%}{1750}$ = 2.74	$\frac{5000\times120\%}{1825}$ = 3.29
4. Debtors Velocity = $\frac{365\text{ days}}{\text{Deb. T/o ratio}}$	$\frac{365}{2.74}$ = 133.2 days	$\frac{365}{3.29}$ = 110.94 days.
5. Earnings per share = $\frac{\text{EAESH}}{\text{No.of E.Shares}}$		
a) Earnings available to ES holders	(1700-1500) + (2000 X 10%) = 400	(1800-1700)+13k X 10% = 400
b) No. of Equity shares	200	300
c) Earnings per share ((a) /(b))	Rs.2	Rs.1.33

Comment: From the above turnover ratios it is clear that utilization of fixed assets and current assets is good when compared to the previous year. With respect to earnings per share, although there is decline when compared to that of previous year, one reason for such decrease is because of fresh issue of equity shares made during the year.

PROBLEM NO: 10

WORKINGS:

i) $\frac{\text{Fixed Assets}}{\text{Total Current Assets}} = \frac{5}{7}$

Or, Total Current Assets = $\frac{\text{Rs.40,000 x 7}}{5}$ = Rs. 56,00,000

ii) $\frac{\text{Fixed Assets}}{\text{Capital}} = \frac{5}{4}$ Or, Capital = $\frac{\text{Rs.40,000 x 4}}{5}$ = Rs. 32,00,000

iii) $\frac{\text{Capital}}{\text{Total Liabilities *}} = \frac{1}{2}$ Or, Total = $\frac{\text{Rs.40,000 x 4}}{5}$ = Rs. 32,00,000

iv) $\frac{\text{Net Profit}}{\text{Capital}} = \frac{1}{5}$ Or, Net Profit = Rs. 32,00,000 x 1/5 = Rs. 6,40,000

v) $\frac{\text{Net Profit}}{\text{Sales}} = \frac{1}{5}$ Or, Sales = Rs. 6,40,000 x 5 = Rs. 32,00,000

vi) Gross Profit = 25% of Rs. 32,00,000 = Rs. 8,00,000

vii) Stock Turnover = $\frac{\text{Cost of Goods Sold (i.e.Sales} - \text{Gross profit)}}{\text{Average Stock}} = 10 = \frac{\text{Rs.32,00,000} - \text{Rs.8,00,000}}{\text{Average Stock}} = 10$

Or, Average Stock = Rs. 2,40,000 Or, $\frac{\text{Opening Stock} - \text{Rs.4,00,000}}{2}$

Or, Opening Stock = Rs. 80,000

Dr. **Trading Account** **Cr.**

Particulars	(Rs.)	Particulars	(Rs.)
To Opening Stock	80,000	By Sales	32,00,000
To Manufacturing exp./ Purchase (Bal. fig)	27,20,000		
To Gross Profit b/d	8,00,000	By Closing Stock	4,00,000
	36,00,000		**36,00,000**

Dr. **Profit and Loss Account** **Cr.**

Particulars	(Rs.)	Particulars	(Rs.)
To Operating Expenses (Balancing figure)	1,60,000	By Gross Profit c/d	8,00,000
To Net Profit	6,40,000		
	8,00,000		**8,00,000**

Balance Sheet

Capital and Liabilities	(Rs.)	Assets	(Rs.)
Capital	32,00,000	Fixed Assets	40,00,000
Liabilities	64,00,000	Current Assets	
		Closing Stock	4,00,000
		Other Current Assets (Bal. fig)	52,00,000
	96,00,000		**96,00,000**

PROBLEM NO: 11

The Net Profit is calculated as follows:

Particulars	Amount (Rs.)
Sales Revenue	22,50,000
Less: Direct Costs	15,00,000
Gross Profits	7,50,000
Less: Operating Expenses	2,40,000
Earnings Before Interest and Tax (EBIT)	5,10,000
Less: Interest on Debt [9% × 7,50,000 (i.e. 30 % of 25,00,000)]	67,500
Earnings Before Tax (EBT)	4,42,500
Less: Taxes (@ 40%)	1,77,000
Profit After Tax (PAT)	**2,65,500**

i) Net Profit Margin (After tax):

$$\text{Net Profit Margin} = \frac{\text{EBIT}(1-t)}{\text{Sales}} \times 100 = \frac{\text{Rs. } 5,10,000 \times (1-0.4)}{\text{Rs. } 22,50,000} = 13.6\%$$

ii) Return On Assets (ROA) (After tax):

$$\text{ROA} = \frac{\text{EBIT}(1-t)}{\text{Total Sales}} \times 100 = \frac{\text{Rs. } 5,10,000 \times (1-0.4)}{\text{Rs. } 22,50,000}$$

$$= \frac{\text{Rs. } 3,06,000}{\text{Rs. } 25,00,000} = 0.1224 = 12.24\%$$

iii) $\text{Asset turnover} = \frac{\text{Sales}}{\text{Assets}} = \frac{\text{Rs. } 22,50,000}{\text{Rs. } 25,00,000} = 0.9$

Asset turnover = 0.9

iv) $\text{Return on equity (ROE)} = \frac{\text{PAT}}{\text{Equity}} = \frac{\text{Rs. } 2,65,000}{\text{Rs. } 17,50,000} = 15.17\%$

PROBLEM NO: 12

i) Quick Ratio = $\frac{Q.A}{C.L}$

Quick Assets = C.A - Stock - Prepaid exp. = 30,50,000 - 21,60,000 - 10,000 = 8,80,000

Quick Ratio = $\frac{8,80,000}{10,00,000}$ = 0.88 : 1

ii) Debt equity Ratio = $\frac{L.T.Debt}{S/L/F} = \frac{16,00,000}{(20,00,000+800,000)}$ = 0.57 : 1

iii) Return on Capital Employed (ROE) = $\frac{EBIT}{Capitle\ employed} \times 100 = \frac{12,00,000}{44,00,000} \times 100 = 27.27\%$

iv) A.C.P = $\frac{Sunday\ Dr}{Credit\ sales} \times 360 = \frac{4,00,000}{32,00,000} \times 360 = 45$ Days

WORKING NOTES:

1. Current Assets & Current Liabilities Computation

$\frac{C.A}{C.L} = \frac{2.5}{1}$

C.A = 2.5 C.L

Working Capital = C.A - C.L

2,40,000 = C.A - C.L

C.A = 2,40,000 + C.L

C.A = 2.5 C.L

2,40,000 + C.L = 2.5 C.L

C.L = $\frac{2,40,000}{1.5}$

Current Liabilities = 1,60,000

∴ Current Assets = 1,60,000 x 2.5 = Rs. 4,00,000

2. Computation of Stock:

Liquid Ratio = $\frac{Liquid\ Assets}{C.L}$

1.5 = $\frac{C.A - Stock}{1,60,000}$

1.5 x 1,60,000 = 4,00,000 - Stock

Stock = Rs. 1,60,000

3. Computation of P.F, Fixed Assets, Capital & Sundry Creditors

Proprietary Ratio = $\frac{F.A}{P.F.}$

Fixed Assets = 0.75 x P.F

New working capital = 0.25 X P.F

$\frac{2,40,000}{0.25}$ = P.F

∴ Proprietary Funds = 9,60,000

Fixed Assets = 9,60,000 x 75% = 7,20,000

Capital = Proprietary Funds - Reserves and Surplus = 9,60,000 - 1,60,000 = Rs. 8,00,000

Sundry Creditors = C.L - B.O.D = 1,60,000 - 40,000 = 1,20,000

Balance Sheet

Liabilities	Rs.	Assets	Rs.
Capital	8,00,000	F.A	7,20,000
R & S	1,60,000	Stock	1,60,000
B.O.D	40,000	C.A	2,40,000
S/Cr	1,20,000		
	11,20,000		**11,20,000**

PROBLEM NO: 13

Workings Notes:

1. Net Working Capital = Current Assets - Current Liabilities = 2.5 - 1= 1.5

Thus, Current Assets = $\frac{\text{Net Working Capital x 2.5}}{1.5} = \frac{\text{Rs. 4,50,000 x 2.5}}{1.5} = \text{Rs. 7,50,000}$

Current Liabilities = Rs. 7,50,000-Rs. 4,50,000= Rs. 3,00,000

2. Sales = Total Assets Turnover x Total Assets

= 2 x (Fixed Assets + Current Assets)

= 2 x (Rs. 10,00,000 + Rs. 7,50,000) = Rs. 35,00,000

3. Cost of Goods Sold = 100% - 20% = 80% of Sales = 80% of Rs. 35,00,000 = Rs. 28,00,000]

4. Average Stock = $\frac{\text{Cost of Good Sold}}{\text{Stock Turnover Ratio}} = \frac{\text{Rs. 28,00,000}}{7} = \text{Rs. 4,00,000}$

Closing Stock = (Average Stock x 2) - Opening Stock = (Rs. 4,00,000 x 2) - Rs. 3,80,000= Rs. 4,20,000

Quick Assets = Current Assets - Closing Stock = Rs. 7,50,000-Rs. 4,20,000= Rs. 3,30,0000

$\frac{\text{Debt}}{\text{Equity (here Proprietary fund)}} = \frac{1}{1.5}$, Or $\text{Proprietary fund} = 1.5\ \text{Debt}$

Total Asset = Proprietary Fund (Equity) + Debt

Or 17,50,000 = 1.5 Debt + Debt

$\frac{\text{Debt}}{\text{Equity (here Proprietary fund)}} = \frac{1}{1.5}$, Or $\text{Proprietary fund} = 1.5\ \text{Debt}$

Total Asset = Proprietary Fund (Equity) + Debt

Or 17,50,000 = 1.5 Debt + Debt

$\text{Or Debt} = \frac{\text{Rs. 17,50,000}}{2.5}, = \text{Rs. 7,00,000}$

Proprietary fund = 7,00,000 x 1.5 =Rs. 10,50,000

$= \frac{\text{Rs. 17,50,000 x 1.5}}{2.5} = \text{Rs. 10,50,000}$

5. Profit after tax (PAT) = Total Assets x Return on Total Assets = Rs. 17,50,000 x 15% = Rs. 2,62,500

i) Calculation of Quick Ratio

$\text{Quick Ratio} = \frac{\text{Quick Assets}}{\text{Current Liabilities}}, = \frac{\text{Rs. 3,30,000}}{\text{Rs. 3,00,000}} = 1.1:1$

ii) Calculation of Fixed Assets Turnover Ratio

$$\text{Fixed Assets Turnover Ratio} = \frac{\text{Sales}}{\text{Fixed Assets}}, = \frac{\text{Rs.35,00,000}}{\text{Rs.10,00,000}} = 3.5$$

iii) Calculation of Proprietary Ratio

$$\text{Proprietary Ratio} = \frac{\text{Proprietary fund}}{\text{Total Assets}} = \frac{\text{Rs.10,50,000}}{\text{Rs.17,50,000}} = 0.6 : 1$$

iv) Calculation of Earnings per Equity Share (EPS)

$$\text{Earnings per Equity Share (EPS)} = \frac{\text{PAT} - \text{Preference Share Dividend}}{\text{Number of Equity Shares}}$$

$$= \frac{\text{Rs.2,62,500} - \text{Rs.18,000 (9\% of 2,00,000)}}{60,000} = \text{Rs.4.075 per share}$$

v) Calculation of Price - Earnings Ratio (P/E Ratio)

$$\text{P/E Ratio} = \frac{\text{Market Price of Equity Share}}{\text{EPS}} = \frac{\text{Rs.16}}{\text{Rs.4.075}} \quad 3.926$$

PROBLEM NO: 14

Profit and Loss statement of Stan Co.

Particulars	Amount (Rs.)
Sales (WN 4)	50,00,000
Less: variable costs (60% on sales)	30,00,000
Contribution (sales less variable cost)	20,00,000
Less: Fixed costs **(bal. fig)** (Contribution less profit)	9,00,000
EBIT (WN 7)	11,00,000
Less: Interest **(bal. fig)** (EBIT - EBT)	6,00,000
EBT Given **(10% of sales of Rs.50,00,000)**	5,00,000
Less: Tax	Nil
EAT (EBT less Tax)	5,00,000

Important Note:

- If Opening Stock (or) Closing Stock (or) GP Ratio (or) COGS-related information is given in the question, use Trading and P&L Account format.
- If Leverage (or) Interest Coverage (or) Interest coverage (or)EBIT/EBT/EAT related information is given ,use P&L statement format as given in this question,

Balance sheet of M/S Stan Co.

Liabilities	Rs.	Assets	Rs.
Share capital **(WN 11)**	5,00,000	Fixed Assets **(WN 5)**	41,66,667
Reserves & surplus **(WN 12)**	15,00,000	Current Assets	
12% Term Loan **(WN 8)**	50,00,000	Stock **(WN 2)**	10,00,000
Current Liabilities **(WN 1)**	5,00,000	Debtors **(WN 6)**	4,16,667
		Other current Assets **(WN 13)**	83,333
		Other Non-current Assets **(bal. fig)**	18,33,333
Total:	**75,00,000**	**Total:**	**75,00,000**

Working Notes and Calculation:

1. $\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}} = 3$ times. So, Current Assets = 3 x Current Liabilities,

Net working capital = Current Assets - Current Liabilities = Rs. 10,00,000.

3x Current Liabilities - Current Liabilities = Rs.10,00,000. So, 2x Current Liabilities = Rs.10,00,000

So, Current Liabilities $= \frac{\text{Rs.10,00,000}}{2}$ Rs.**5,00,000**

Hence, Current Assets = 3 x Rs.5,00,000 = **Rs.15,00,000**

2. $\frac{\text{Current Assets}}{\text{stock}} = \frac{\text{Rs.15,00,000}}{\text{stock}} = \frac{3}{2}$. So, Stock = Rs. 15,00,000 x $\frac{2}{3}$ **=Rs. 10,00,000**

3. Quick Ratio = $\frac{\text{QuickAssets}}{\text{QuickLiabilities}} = 1\text{time}$ So, $\frac{\text{Current Assets} - \text{stock}}{\text{Current Liabilities} - \text{BankOD}} = 1$

On Substitution, $\frac{\text{Rs.15,00,000} - \text{Rs.10,00,000}}{\text{Rs.5,00,000} - \text{BankOD}} = 1$ On solving, we get, **Bank OD =Rs. Nil**

4. Stock Turnover Ratio = $\frac{\text{sales}}{\text{Inventory}} = \frac{\text{Sales}}{\text{Rs.10,00,000}} = 5$ So, **Sales** = Rs. 10,00,000 x5 = **Rs.50,00,000**

> **Note:** In the absence of specific information about opening and closing Inventory, it is assumed that Opening Inventory = Closing Inventory = Average Inventory.
>
> In the absence of GP Ratio and cogs, stock Turnover Ratio is taken based on sales.

5. Fixed Assets T/O= $\frac{\text{Sales}}{\text{NetFixedAssets}} = \frac{\text{Rs.50,00,000}}{\text{NetFixedAssets}}$ = 1.2 so, Net Fixed Assets = $\frac{\text{Rs.50,00,000}}{1.2}$ = Rs.41,66,667

6. Avg. Collection period = 30 days. Assuming 1 year = 360 days, Debtors= Sales x $\frac{30}{360}$ = Rs.50,00,000 x $\frac{30}{360}$ = Rs.4,16,667

7. Financial Leverage = $\frac{\text{EBIT}}{\text{EBT}} = \frac{\text{EBIT}}{\text{Rs.5,00,000}}$ = 2.20 So, EBT = Rs. 5,00,000 x 2.2 =Rs.11,00,000

8. Long Term Loan = $\frac{\text{Interest Amount}}{\text{Interest Rate}} = \frac{\text{Rs.6,00,000}}{12\%}$ =Rs.50,00,000. [**Note:** Interest Amt. from P&L Stmt]

9. Total External Liabilities = Long Term Liabilities + Current Liabilities = Rs.55,00,000 =Rs.20,00,000

10. $\frac{\text{Total Liabilities}}{\text{Net worth}} = 2.75$ So, $\frac{\text{Rs.55,00,000}}{\text{Net worth}} = 2.75$. Hence, Net worth = $\frac{\text{Rs. 55,00,000}}{2.75}$ = Rs.20,00,000

11. Number of Equity shares= $\frac{\text{Net worth}}{\text{Book Value per share}} = \frac{\text{Rs. 20,00,000}}{\text{Rs. 40}}$ =50,000 Shares.

So, Equity share capital= 50,000 shares x Rs. 10 = Rs.5,00,000

12. Retained Earnings = Net worth- share capital = Rs.20,00,000-Rs.5,00,000**=Rs.15,00,000**

13. Total Current Assets = WN 1 **= Rs.15,00,000**

Inventory (given) = Rs. 10,00,000	**Debtors (WN 6) = Rs.4,16,667**	**Cash and Bank (bal. fig) Rs.83,333**

PROBLEM NO: 15

i) Liquidity ratios:

a) Current ratio = CA/CL= Rs. 25,88,000 / Rs. 6,40,000 = 4.04 : 1 (previous year); Rs. 30,52,000 / Rs. 8,00,000 = 3.82 : 1 (current year)

b) Acid test ratio = (Rs. 25,88,000 − Rs.18,68,000) / Rs. 6,40,000 = 1.125 : 1 (previous year); (Rs. 30,52,000 − Rs. 21,72,000) / Rs. 8,00,000 = 1.1 : 1 (current year)

ii) Solvency ratios:

a) Debt-equity ratios:

1. Total outside debts/Equity funds = Rs. 22,40,000/Rs. 24,68,000 = 0.91 (previous year) ; Rs. 24,00,000/Rs. 28,12,000 = 0.85 (current year)
2. Long-term debts/Equity funds = Rs. 16,00,000/Rs. 24,68,000 = 0.65 (previous year); Rs. 16,00,000/Rs. 28,12,000 = 0.57 (current year)

b) Interest coverage ratio:

= EBIT/Interest charges = Rs.12,00,000/Rs.1,60,000 =7.5 times (current year)

iii) Profitability ratios (current year):

a) Gross profit ratio = (Gross profit/sales) × 100 = (Rs. 12,00,000/Rs. 40,00,000) × 100 = 30 per cent

b) Net profit ratio = (Net profit/sales) × 100 = (Rs. 6,76,000/Rs. 40,00,000) × 100 = 16.9 per cent

c) Return on total resources = (EAT + Interest − Tax savings on interest)/Total assets) × 100 = [(Rs.6,76,000 + Rs. 1,60,000 − Rs. 56,000)/Rs. 64,00,000] × 100 = 12.2 per cent

d) Return on capital employed = [(EAT + Interest − Tax savings on interest)/Total assets] × 100 = [(Rs. 6,76,000 + Rs. 1,60,000 − Rs. 56,000)/44,12,000] × 100 = 17.7 per cent

e) Return on equity funds = (Net profit after taxes/Equity funds) × 100 = (Rs. 6,76,000/Rs. 28,12,000) × 100 = 24 per cent.

Note: Ratios (c), (d) and (e) can also be determined by taking average total assets/capital employed/equity funds.

iv) Activity ratios:

a) Debtors turnover = Rs. 40,00,000/Rs. 3,60,000 = 11.1 times

b) Stock turnover = Rs. 28,00,000/Rs. 20,00,000 = 1.4 times

c) Total assets turnover = Rs. 28,00,000/Rs. 64,00,000 = 0.44 times

Comment: The company's position is quite sound from the point of view of liquidity, solvency and profitability. However, its activity ratios, particularly in terms of utilization, do not seem to be satisfactory.

PROBLEM NO: 16

The efficient use of assets is indicated by the following key ratios: (a) Current assets turnover, (b) Debtors' turnover, (c) Inventory turnover, (d) Fixed assets turnover, and (e) Total assets turnover.

Computation of Ratios:

Particulars	Year 1	Year 2	Year 3
a) Current assets turnover ratio (Cost of goods sold / Total current assets)	1.36	1.55	1.59
b) Debtor's turnover (Credit sales / Average debtors)	2.8*	3.30	3.19
c) Inventory turnover (Cost of goods sold/ Average inventory)	3.46*	4.10	3.91
d) Fixed assets turnover (Cost of goods sold/ Fixed Assets)	3.75	2.38	2.58
e) Total assets turnover (Cost of goods sold/ Total assets)	1.00	0.93	0.98

* Based on Debtors and Inventory at the end, as their opening balances are not available.

Comments: The first three ratios indicate the efficiency of Current Assets usage, and the latter two, namely, Fixed assets turnover and Total assets turnover ratio, show the efficiency of utilisation of these. Current assets utilisation appears to be very satisfactory as reflected in the first three types of ratios. No major change is noticeable in their values over a period of time, which is presumably indicative of consistency in Debtors collection period and inventory turnover. There does not seem to be any significant problem regarding utilisation of Current assets.

However, it appears that fixed assets are not being fully utilised. Investments in fixed assets have more than doubled during years 2 and 3. The Fixed assets turnover ratio has sharply fallen to 2.58 in year 3 from 3.75 in year 1. Thus, investment in fixed assets are either excessive, or the capacity of the additional plant is under utilised. This is corroborated by the fact that sales in the latter 2-year have increased by around 15%. Therefore, the remedy lies in utilising the plant capacity by increasing production and sales.

THE END