UDHNA CITIZEN COMMERCE COLLEGE &
S.P.B. COLLEGE OF BUSINESS ADMINISTRATION &
SMT. DIWALIBEN HARJIBHAI GONDALIA COLLEGE OF BCA & IT
(Self Financed)
(Managed by Udhna Academy Education Trust)
214, Ranchhod Nagar, Opp. Swaminarayan Temple,Surat-Navsari Road, SURAT-394 210

Ratio Analysis

Ans.1 Suppose Opening Stock is X
So closing stock X + 10000
Avg. Stock = Op.Stock + Closing Stock /2
= X + (X+10000)/2
= 2X + 10000/2
= X +5000
Sales = 500000
Profit :
Suppose Cost 100
Profit 25
Sales 125
So Profit (500000*25/125) = 100000
COGS = 500000-100000 = 400000

Stock turnover = COGS/ Avg.Stock
8 = 400000/X+5000
X = 45000
Opening Stock = 45000
Closing stock = 45000+10000 = **55000**

Ans.2 Working Capital = Current Assets - Current liabilities
= 2.8-1
= 1.8

working capital	Current Assets
1.8	2.8
81000	(?)

So, Current Assets = 126000

working capital	Current liabilities
1.8	1
81000	(?)

Current liabilities = 45000

There is no BOD, so current liabilities = liquid liabilities
Liquidity ratio 1.5:1
So, Liquid Assets = (45000 * 1.5) = 67500

Ans.3 Working Capital = Current Assets - Current liabilities
= 2.5-1

= 1.5

working capital	Current Assets
1.5	2.5
60000	(?)

So, Current Assets = 100000

working capital	Current liabilities
1.5	1
60000	(?)

Current liabilities = 40000

Liquid Ratio = Current Asset – stock/ Current liabilities – BOD

Suppose BOD = x, SO stock = 2x

3 = 100000 -2x / 40000-x

X = 20000

BOD = 20000

Stock = 40000

Liquid Assets = Current Asset – stock

= 100000- 40000

= 60000

Liquid Liabilities = Current liabilities – BOD

= 40000 – 20000

= 20000

Ans.4

1. Liquidity ratio = Liquid Assets/ Liquid Liabilities
   =160000/80000
   = 2 times

2. Gross Profit ratio = Gross Profit /Sales *100
   = 320000/800000 *100
   = 40%

3. Operating Ratio = COGS + Operating exp./Sales *100
   = 480000 + 54000 / 800000 *100
   = 66.75%

4. Stock Turnover Ratio = COGS/ Avg. Stock
   = 480000/50000
   = 9.6 times

5. Debtor Ratio = Debtors + Bills receivable / Credit Sales * 360
   = 56480 + 18400 /480000 *360
   = 56.16 days

6. Rate of return on capital employed = EBIT/ Capital employed *100
   = 178000/520000 *100
   = 34.23%

7. Rate of return on equity share capital = EAIT – Pref. Dividend / Equity share capital *100

= 80000- 16000 / 240000 *100
= 26.67%

Ans.5

1. Current Ratio = Current Assets / Current Liabilities
   = 320000/170000
   = 1.88:1

   Suppose credit sales 100
   Cash sales 20
   Total sales 120

Total sales	Credit Sales
120	100
1080000	?

   Credit Sales = 900000

2. Debtors ratio = Debtors + Bills receivable / Credit Sales * 360
   = 100000 + 30000 /900000 *360
   = 52 Days

3. Return on capital employed = EBIT/ Capital employed *100
   = 300000/750000 *100
   = 40%

4. Net profit ratio = Net Profit / Sales * 100
   = 142000/1080000 *100
   = 13.15%

5. Capital gearing ratio = Long term liabilities + Pref.Share Capital / Equity Share Capital *100
   =200000 + 150000 / 300000 * 100
   = 1.16:1

6. Debt equity ratio(on the basis of long term debt) = Long term liabilities/ Owner's fund *100
   = 200000/ 550000 * 100
   = 36.36%

7. Liquid ratio = Liquid Assets/ Liquid Liabilities
   = 180000/140000
   = 1.29:1

8. Operating Ratio = COGS + Operating exp./Sales *100
   = 540000 + 256000 /1080000 *100
   = 73.70%

Ans.6

Debtor Ratio = Debtors + Bills receivable / Credit Sales * 360
Suppose credit sales = x

90 = 200000 + 50000 /x *360

x = 1000000

Suppose Total Sales 100

- Cash sales 20

Credit sales 80

Credit sales	Total Sales
80	100
1000000	?

Total Sales 1250000

Gross Profit 1250000 * 40% = 500000

COGS = Sales 1250000 – Gross profit 500000 = 750000

Avg. Stock = 125000 + 175000/2 = 150000

1. Stock turnover ratio = COGS/ Avg.Stock
   = 750000/150000
   = 5 times

2. Proprietary ratio = Owner's Fund/ Total Assets *100
   = 1015000 / 1495000 *100
   = 67.89%

Owner's fund

Equity Share capital	400000
10% redeemable Pref. share capital	250000
Reserves and Surplus	
Profit and Loss A/c	170000
General Reserve	200000
	1020000
- Debenture discount	5000
Owner's Fund	**1015000**
+ Debentures	250000
Capital Employed	**1265000**

3. Current ratio = Current Assets / Current Liabilities
   = 865000/ 230000
   = 3.76:1

4. Liquid ratio = Liquid Assets/ Liquid Liabilities
   = 580000/190000
   = 3.05:1

5. Rate on return on capital employed = EBIT/ Capital employed *100
   = 250000/1265000 *100
   = 19.76%

EBIT	= 250000
-Int.	= 20000
	230000
Tax	115000
EAIT	115000

6. Rate on return on equity capital = EAIT – Pref. Dividend / Equity share capital *100
   = 115000- 25000 / 400000 *100
   = 22.5%

7. Net profit ratio = Net Profit / Sales * 100
   = 115000/1250000 *100
   = 9.2%

COGS = opening stock + purchases – closing stock
750000 = 125000 + purchases – 175000
Purchases = 800000

8. Creditors ratio = Creditors + Bills Payable / Credit Purchase *360
   = 100000 + 50000 / 800000 * 360
   = 67.5 days

Ans.7 Average Stock = opening stock + closing stock /2
320000 = X + 500000 /2
X= 140000
Opening Stock = 140000

Trading and Profit & Loss Account

Opening Stock	140000	Sales	6000000
Purchases	3500000	Closing Stock	500000
Gross Profit (?)	2860000		
	6500000		6500000
Admi. Exp. & Fin. Exp	600000	Gross Profit	2860000
Taxes	1130000		
Net Profit	1130000		
	2860000		2860000

1. Gross Profit Ratio = Gross Profit / Sales *100
   = 2860000/ 6000000 *100
   = 47.67%

2. Return of equity share holder fund = Net Profit- pref.div./ equity share holder fund *100
   = 1130000-200000/ 4530000 *100
   = 20.53%

   Equity share holder fund = 3000000 + 1000000 +600000 – 70000 = 4530000

3. Debtor Ratio = = Debtors + Bills receivable / Credit Sales * 360
   = 800000 + 50000/6000000 *360
   = 51 days

4. Stock turnover ratio = COGS/ Avg. Stock
   = 3140000/320000
   = 9.81 times

COGS = 140000 + 3500000 – 500000 = 3140000

5. Operating Ratio = COGS + Operating exp./Sales *100
   = 3140000 + 600000 / 6000000 *100
   = 62.33%
6. Net Profit Ratio = Net Profit / Sales * 100
   = 1130000/ 6000000 *100
   = 18.8%

Ans.8 Suppose Closing stock x
Opening stock 2x
Sales 30x
Purchase 16x
Adjusted purchase 60% so Gross Profit 40%
Gross Profit 12x
Opening stock + purchases + exp. related purchase + Gross profit = sales + closing stock
2x +16x + 20000 + 12x = 30x + x
x = 20000
Closing stock x = 20000
Opening stock 2x = 40000
Sales 30x = 600000
Purchase 16x = 320000
Gross Profit 12x = 240000
COGS (600000-240000) = 360000

1. Stock turnover = COGS/ Average stock
   = 360000/30000
   = 12 times
2. Operating ratio = COGS + Operating exp./Sales *100
   = 360000 + 60000 / 600000 *100
   = 70%
3. Net profit ratio = Net profit / Sales *100
   = 90000/600000 * 100
   = 15%

Gross Profit =	240000
-Operating exp. =	<u>60000</u>
	180000
Taxes =	<u>90000</u>
Net Profit	90000

Ans.9 Suppose Closing stock x
Opening stock 2x
Sales 30x
Purchase 16x
Adjusted purchase 60% so Gross Profit 40%
Gross Profit 12x
Opening stock + purchases + exp. related purchase + Gross profit = sales + closing stock
2x + 16x + 60000 + 12x = 30x + x

x = 60000
Closing stock x = 60000
Opening stock 2x = 120000
Sales 30x = 1800000
Purchase 16x = 960000
Gross Profit 12x = 720000
COGS (1800000-720000) = 1080000

1. Stock turnover = COGS/ Average stock
   = 1080000/9000
   = 12 times
2. Debtor Ratio = Debtors + Bills receivable / Credit Sales * 360
   = 300000+ - /1200000 *360
   = 90 days
3. Creditor's ratio = Creditors + Bills payable / credit purchases *360
   = 153600 / 768000 *360
   = 72 days

Ans.10

Profit before interest and tax (?)	325000
-Interest on Debenture 20000 Interest on Public Deposit 5000	 25000
	300000
- 40 % taxes	120000
Net Profit after tax	180000
- preference dividend	40000
Divisible profit to equity share holder	140000

1. Rate of return on capital employed = EBIT/ Capital employed *100
   = 325000/ 1625000 *100
   = 20%

   Suppose Opening Stock = 100x
   Closing stock 25x
   Purchases 500x
   The ratio of purchases and sales is 2:5
   So sales 1250 x
   Gross Profit 625x

Opening stock + purchases + exp. related purchase + Gross profit = sales + closing stock
100x + 500x + 40000 + 625x = 1250x + 25x
X = 800

   Opening Stock 100x = 80000
   Closing stock 25x = 20000
   Purchases 500x = 400000
   So sales 1250 x = 1000000
   Gross Profit 625x = 500000
   COGS = 1000000-500000 = 500000

2. Debtor Ratio = Debtors + Bills receivable / Credit Sales * 360
   = 250000 + 50000 /600000 *360

= 180 days

3. Operating Ratio = COGS + Operating exp./Sales *100
   = 500000 +200000 /1000000 *100
   = 70%

Profit & Loss Account

Operating Exp. (?)	200000	Gross Profit	500000
Taxes	120000		
Net Profit	180000		
	500000		500000

4. Net Profit Ratio = Net Profit / Sales *100
   = 180000/1000000 *100
   = 18%

5. Inventory turnover ratio = COGS/ Avg.stock
   = 500000/50000
   = 10 times

6. Proprietary Ratio = Owner's Fund/ Total Assets *100
   = 1375000 / 2500000 *100
   = 55%

Owner's Fund = 700000 + 500000 + 210000 – 35000 = 1375000
Total Assets:

Fixed Assets	2000000
Debtors	250000
Bills receivables	50000
Prepaid expenses	20000
Cash and Bank	120000
Quickly salable securities	60000
Total Assets	2500000

Ans.11 Suppose Sales X
COGS (X*70%) 0.70X
Operating ratio = COGS + Operating exp./Sales *100
90 = 0.7X + 256000/X * 100
X = 1280000
Sales = 1280000
COGS = (1280000*70%) 896000
Credit Sales = (1280000*62.5%) 800000

1. Current ratio = Current Assets / Current liabilities
   = 352000/176000
   = 2 times

2. Debtors ratio = Debtors + Bills receivable / Credit Sales * 360
   = 160000 + - /800000 *360
   = 72 days

3. Return on share holders' funds = EAIT / share holders' fund *100
   = 64000 / 480000 *100
   = 13.33%

Calculation of EAIT

Sales	1280000
-COGS	896000
Gross Profit	384000
-Operating exp.	256000
	128000
Tax (50%)	64000
EAIT	64000

Calculation of share holders' fund
Share capital 400000 + Retained earnings 83200 – fictitious assets 3200
= 480000

4. Rate of return on capital employed = EBIT/ Capital employed *100
   = 176000/800000 *100
   = 22%

Calculation of EBIT

EAIT	64000
+Tax	64000
	128000
+interest on Debenture	48000
EBIT	176000

Calculation of Capital employed
Share capital 400000 + Retained earnings 83200 + long term liabilities 320000 – fictitious assets 3200
= 800000

5. Net profit ratio = Net Profit / Sales * 100
   = 64000/1280000 *100
   = 5%

6. Stock Turnover Ratio = COGS/ Avg. Stock
   = 896000/130000
   = 6.9 times

Avg. Stock = opening stock + closing stock /2
= 132000 + 128000/2
= 130000

Ans.12

1. Liquidity ratio = Liquid Assets/ Liquid Liabilities
   =200000/100000
   = 2 times

2. Gross Profit ratio = Gross Profit /Sales *100
   = 208000/520000 *100

= 40%

Credit sales (which is 60% of total sales) Rs. 312000
So sales 520000
Adjusted purchase 312000
Gross Profit = 520000 – 312000 = 208000

3. Operating Ratio = COGS + Operating exp./Sales *100
   = 312000 + 64000 / 520000 *100
   = 72.31%

4. Debtor Ratio = Debtors + Bills receivable / Credit Sales * 360
   = 70600 + 23000 /312000 *360
   = 108 days

5. Stock Turnover Ratio = COGS/ Avg. Stock
   = 312000/31200
   = 10 times

6. Rate of return on capital employed = EBIT/ Capital employed *100
   = 260000/650000 *100
   = 40%

Calculation of Capital employed

	Rs.
Eq. sh. Cap. (Rs.10)	300000
Pref. sh.cap. (Rs.10)	200000
Gen. Res.	50000
15% deb.	100000
Public deposit	130000
	780000
Preliminary exp.	130000
	650000

Calculation of EBIT

EAIT	122500
+Tax	122500
	245000
+interest on Debenture	15000
EBIT	260000