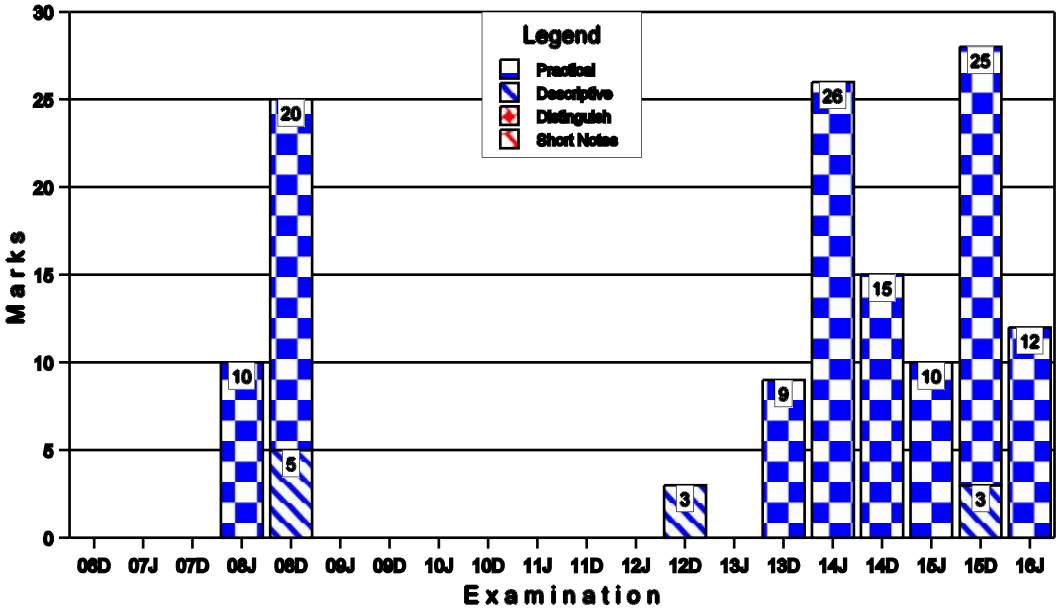
1 Financial Modeling and Analysis of Shareholders' Equity

This Chapter Includes : Financial modeling- Concepts and Application; (NPV), (IRR); Forecasting Techniques; Financial Analysis; Financial Statement Analysis; Comparative Financial Statement; Common size Statement; Trends Ratio; Reformulating the Statement of Owners' Equity; Comprehensive Income Reporting; Ratio Analysis.

Marks of Short Notes, Distinguish Between, Descriptive & Practical Questions



DESCRIPTIVE QUESTIONS

2008 - Dec [2] (b) Profit Margin and Turnover Ratio vary from one industry to another. What differences would you expect to find between a grocery chain such as Big Bazaar and a steel company such as Tata Steel?

(5 marks)

Answer:

Differences in the amounts of assets necessary to generate a rupee of sales cause Asset Turnover Ratios to vary among industries. For example, a steel company needs a greater number of rupees in assets to produce a rupee in sales than does a grocery store chain. Also, profit margins and Turnover Ratios may vary due to differences in the amount of expenses incurred to produce sales. For example, one would expect a grocery store chain to spend more per rupee of sales than does a steel company. Often, a large turnover will be associated with a low profit margin and vice versa.

2012 - Dec [5] (b) Indicate the important accounting ratios that would be used by each of the following:

(i) A long-term creditor interested in determining whether his claim is adequately secured.

(ii) A bank who has been approached by a company for short-term loan/overdraft.

(iii) A Shareholder who is examining his portfolio and who is to decide whether he should hold or sell his shares in a company.

(1 x 3 = 3 marks)

Answer:

(i) Debt- Service Coverage Ratio and Interest Coverage Ratio.

(ii) Current Ratio and Quick Ratio.

(iii) Return on Equity, Earning per share, Dividend per share.

2015 - Dec [2] (b) (iii) Enumerate different types of financial modeling on the basis of its usage in modeling of economy, industry and company.

(3 marks)

Answer:

Types of Financial Models:

Financial models are often developed over the course of months and years, and many financial analysts get caught up the grind of building, auditing and maintaining existing financial models on a daily basis, losing the big picture of understanding best practice modeling solutions used in business and economic decision analysis. It is therefore useful for a good financial analyst to take a step back, examine the broad categories of financial models that are commonly used, and determine the optimal approach for the financial and business modeling of different scenarios and situations. Let us first re-visit the basics, and look at how financial models can be related to its usage in modeling an economy, industry or company.

(i) Macroeconomic Financial Models: The models are usually econometric analysis based, built by government departments, universities or economic consulting firms, and used to forecast the economy of a country. Macroeconomic models are used to analyze the like effect of government policy decisions on variables such as foreign exchange rates, interest rates, disposable income and the Gross National Product (GNP).

(ii) Industry Financial Models: Industry models are usually econometric based models of specific industries or economic sectors. Industry models are often similar to macroeconomic models, and typically used by industry associations or industry research analysts to forecast key performance indicators within the industry in question.

(iii) Corporate Financial Models: Corporate financial models are built to model the total operations of a company, and often perceived to be critical in the strategic planning of business operations in large corporations and startup companies a like.

PRACTICAL QUESTIONS

2008 - June [7] (a) WELSH LTD. has 1,50,000 equity shares of ₹ 10 each and 12%. Long-term debt of ₹ 12,00,000 outstanding at the beginning of the year 2008-09. The finance department of the company has generated the following forecast financial statistics for the year 2008-09.

Return on Total Assets (ROTA) (EBIT/Total Assets)	25 percent
Debt ratio (External liabilities/equity)	0.75
Effective interest rate (EIR) (Interest expenses/Total liabilities)	10 percent
Current Assets to Fixed Assets	0.60 : 1
Tax Rate	40%

The Assets, Liabilities and equity figures used to compute the above financial statistics are based on forecast balances as at 31.3.2009. The company has no plan to change its equity share capital and long-term debt.

Requirements:

(i) Prepare the forecast Balance Sheet as at 31st March, 2009 with as many details as possible; and

(ii) Forecast Earnings per share *(EPS)*. Show necessary workings.

(3 + 3 + 4 = 10 marks)

Answer:

1. This question is a typical one. It is an advanced problem of ratio analysis.
2. Figures are given for the beginning of 2008 - 09. You are asked to give figures for the end of the year.
3. Total interest expense is 10% of total liabilities. Total liabilities will be debt (₹ 12 lacs) plus other liabilities. Interest expense is 12% of ₹ 12 lacs i.e. ₹ 1.44 lacs. From this clue, you can determine the total liabilities and other liabilities.
4. You should find total liabilities as ₹ 14.4 lacs consisting of ₹ 12.0 lacs as debt and ₹ 2.4 lacs as other liabilities.

5. Equity at the beginning of the year is ₹ 15.0 lacs, how much is it at the end of the year? External liabilities are 75% of equity as the debt ratio is given as 0.75. The external liabilities are known in previous step as 14.40 lacs. The equity would be 14.40/0.75 = ₹ 19.20 lacs.
6. Total assets are equal to equity plus external liabilities. You have already calculated equity as ₹ 19.2 lacs and external liabilities as ₹ 14.4 lacs. Thus total assets (fixed assets + current assets) will be ₹ 33.6 lacs. Current assets are 0.6 time the fixed assets. You can determine fixed assets as ₹ 21 lacs and current assets as ₹ 12.60 lacs.

2008 - Dec [2] (a) Complete the balance sheet and sales information in the table below for Godrej Industries using the following financial data:

Debt Ratio : 50%
Quick Ratio : 0.80X
Total Assets Turnover : 1.5X
Days Sales Outstanding : 36.5 days
Gross Profit Margin on Sales: 25%
Inventory Turnover Ratio : 5 X
(All calculations are based on 365 days.)

Balance Sheet

Liabilities	₹	**Assets**	₹
Accounts Payable		Cash	
Long-term Debt	60,000	Accounts Receivable	
Common Stock		Inventories	
Retained Earnings	97,500	Fixed Assets	
Total Liabilities & Equity		Total Assets	3,00,000
Sales		Cost of Goods sold	

(10 marks)

Answer:

1. Debt = (0.50) (Total Assets) = (0.50) (3,00,000) = ₹ 1,50,000
2. Accounts payable = Debt – Long-term Debt = 1,50,000 – 60,000 = ₹ 90,000
3. Common Stock = (Total liabilities – Debt = Retained Earnings and Equity) = 3,00,000 – 1,50,000 – 97,500 = ₹ 52,500

4. Sales = (1.5) (Total Assets) = (1.5) (3,00,000) = ₹ 4,50,000
5. Inventory = Sales/5 = 4,50,000/5 = ₹ 90,000
6. Account Receivables = (Sales/365) (DSO)
   = (4,50,000/365) × (36.5) = ₹ 45,000.
7. Cash + Accounts Receivables = 0.80 × Accounts Payables.
   Or, Cash = 0.80 × 90,000 – 45,000 = ₹ 27,000
8. Fixed Assets = Total Assets – (Cash + Accounts Receivables + Inventories)
   = 3,00,000–(27,000 + 45,000 + 90,000)
   = ₹ 1,38,000
9. Cost of Goods Sold = Sales × (1-0.25)
   = 4,50,000 × 0.75 = ₹ 3,37,500.

Liabilities	₹	Assets	₹
Accounts Payable	90,000	Cash	27,000
Long-term Debt	60,000	Accounts receivables	45,000
Common Stock	52,500	Inventories	90,000
Retained earnings	97,500	Fixed assets	1,38,000
Total Liabilities and Equity	3,00,000	Total assets	3,00,000
Sales	4,50,000	Cost of goods sold	3,37,500

2008 - Dec [3] (a) The Hyundai Instrument Corporation is trying to determine the effect of its Inventory Turnover Ratio and Days Sales Outstanding (DSO) on its cash-flow cycle. The Hyundai Corporation's sales last year (all on credit) were ₹ 1,50,000 and it earned a net profit of 6%. Its Inventory Turnover Ratio was 5 and DSO was 36.5 days. The firm had fixed assets totaling ₹ 35,000. Hyundai had fixed assets totaling ₹ 35,000 and its payable deferral period is 40 days. Calculate Hyundai Instrument Corporation's

(i) Cash Conversion Cycle.
(ii) Total Asset Turnover and ROA, if it holds negligible amounts of cash and marketable securities.
(iii) Cash conversion Cycle, Total Asset Turnover and Return on Assets, if its Inventory Turnover can be raised to 7.3. (2+4+4 = 10 marks)

Answer:

(i) Cash Conversion Cycle = Inventory Conversion period + Receivable collection period less Payable Deferral period.

Cash Conversion Cycle = 365/5 + 36.5 – 40 = 69.5 days.

Total Assets Turnover = Sales /Total Assets. Sales has been given as ₹ 1,50,000 but you have to compute the Total Assets. Think how can you calculate the Total Assets.

(ii) Total Assets will consist of Inventory, Receivables and Fixed assets. Inventory turnover is 5 which means sales are 5 times the inventory. The sales are ₹ 1,50,000 meaning that the inventory must be 1,50,000/ 5 = ₹ 30,000. Inventory can also be calculated on the basis of Cost of goods sold but the question is silent about it, hence it can be safely assumed that inventory turnover ratio is related to Sales and not to Cost of goods sold. You can write a note in this respect in your answer.

Receivables are collected in every 36.5 days. The year is of 365 days and yearly sales are ₹ 1,50,000. The DSO is 36.5 days which means that at any point, sales of 36.5 days are outstanding which constitute the receivables. Thus receivables must be

1,50,000/ 365 × 36.5 = ₹ 15,000.

The Fixed assets are given as ₹ 35,000. Thus total assets are ₹ 30,000 + ₹ 15,000 + ₹ 35,000 = ₹ 80,000. The sales are known. You can know the Total Assets Turnover.

Total Assets = Inventory + Receivables + Fixed assets

Total Assets = ₹ 1,50,000 /5 + (1,50,000/365) × 36.5 + ₹ 35,000

= ₹ 80,000

Total Assets = 1,50,000/80,000

= 1.875

ROA stands for Return on Asset. The return is net profit i.e. 6% of sales. The return works out to ₹ 9,000 and total assets as computed are ₹ 80,000. Return on assets must be 9,000/80,000 = 11.25%.

(iii) The third part is just repetition of second part. Inventory turnover is 7.3 which means sales are 7.3 times the inventory. The inventory must be ₹ 1,50,000/7.3 = ₹ 20,548. Other assets viz. receivables and fixed assets are same. Total assets are ₹ 20,548 + ₹ 15,000 + ₹ 35,000 = ₹ 70,548. The ROA = 9,000/70,548 = 12.7%.
Cash conversion cycle = 365/73 + 36.5 – 40 = 46.5 days.
Total assets turnover = 1,50,000 / 70,548 = 2.12 and ROA = 9,000/ 70,548 = 12.7%.

2013 - Dec [1] {C} (b) On 1st September, 2012, Rama Ltd. held 60% of the ordinary share capital of its only subsidiary Krishna Ltd. The consolidated equity of the group at that date was ₹ 5,76,600, of which ₹ 1,27,000 was attributable to the minority interest.
On 28th February 2013 exactly halfway through the financial year, Rama Ltd. bought a further 20% of the ordinary share capital of Krishna Ltd. In the year ended 31st August, 2013, Rama Ltd.'s profit for the period were ₹ 98,970 and Krishna Ltd.'s were ₹ 30,000. Rama Ltd. paid a dividend of ₹ 40,000 on 1st July, 2013. There were no other movements in equity. It can be assumed that profits accrue evenly throughout the year.
Prepare a consolidated statement of changes in equity for the Rama Ltd. group for the year ended 31st August, 2013. (9 marks)

Answer:
Rama Ltd. Group: Statement of changes in equity for the year ended 31st Aug, 2013

Particulars	**Attribute to equity shareholders of Parents (₹)**	**Minority Interest (₹)**	**Total (₹)**
Brought Forward	4,49,600	1,27,000	5,76,600
Profit for the period (W.N.1)	1,19,970	9,000	1,28,970
Transfer in respect of shares purchased by Rama Ltd.(W.N.2)	66,500	(66,500)	Nil
Dividend	(40,000)	Nil	(40,000)
Carried Forward	5,96,070	69,500	6,65,570

Working Note - 1

Profit shares - Minority share of profit: ₹ 30,000 x 6/12 x 40% = ₹ 6,000
₹ 30,000 x 6/12 x 20% = 3,000. Then total will be (₹ 6,000 + 3,000 = 9,000).
Group share = ₹ 98,970 + (₹ 30,000 – ₹ 9,000) = ₹ 1,19,970.

Working Note - 2

Transfer in respect of share purchase

Value of minority interest at date of transfer:

₹ 1,27,000 + ₹ 6,000 = ₹ 1,33,000.
50% of shareholding transferred: ₹ 1,33,000 / 2 = ₹ 66,500.

2014 - June [3] M. Ltd. is considering a new product line to supplement its range line. It is anticipated that the new product line will involve cash investment of ₹ 7,00,000 at time 0 and ₹ 10,00,000 in Yr 1. After tax cash inflows of ₹ 2,50,000 are expected in year 2, ₹ 3,00,000 in year 3, ₹ 3,50,000 in Yr 4, and ₹ 4,00,000 in each year thereafter through year 10. Though the product line might be viable after year 10, the company prefers to be conservative and end all calculation at that time.

(i) If the required rate of return is 15%, what is the NPV of the project and is it acceptable? (3 marks)

(ii) What is its IRR? (3 marks)

(iii) What would be the case if the required rate of return was 10%? (2 marks)

(iv) What is the project's Pay Back Period?

Years	P.V. Factor Year 1	P.V. Factor Year 2	P.V. Factor Year 3	P.V. Factor Year 4	PVIFA for 10 Years
Discounting Factor @ 13%	0.885	0.783	0.693	0.613	5.426
Discounting Factor @ 14%	0.877	0.769	0.675	0.592	5.215
Discounting Factor @ 15%	0.870	0.756	0.658	0.572	5.020

(2 marks)

Answer:

(i) We know
NPV = P.V. of Cash Inflows - Initial Payment

Calculation of NPV:

Year	Cash inflows	P.V. factor @ 15%	Present value of cash inflows
1	-	0.870	-
2	2,50,000	0.756	1,89,000
3	3,00,000	0.658	1,97,400
4	3,50,000	0.572	2,00,200
5-10	4,00,000	2.164	8,65,600
			14,52,200
Less: Initial investment			7,00,000
Less: P.V. of investment at the end of year 1 (10,00,000 × 0.870)			8,70,000
NPV			(1,17,800)

Hence NPV is negative, project is not acceptable.

(ii) At IRR, NPV = 0

Outflow = Inflow

$$7,00,000+\frac{10,00,000}{(1+r)} = \frac{2,50,000}{(1+r)^2}+\frac{2,00,000}{(1+r)^3}+\frac{3,50,000}{(1+r)^4}+\frac{4,00,000}{(1+r)^5}+\frac{4,00,000}{(1+r)^6}+\frac{4,00,000}{(1+r)^7}+\frac{4,00,000}{(1+r)^8}+\frac{4,00,000}{(1+r)^9}+\frac{4,00,000}{(1+r)^{10}}$$

Since, cash flow spread over more than 2 years. IRR calculated using Trial & Error Method.

Let at 13%, NPV = 0

after solving, we get

NPV = 15,84,956-15,90,072 = 14,116

Hence at 13%, NPV ≠ 0

Let at 13.2%, NPV = 0

after solving, we get

NPV = 15,83,392-15,83,456

= -64

≅ 0

Hence, IRR ≅ 13.2%

(iii) The project would be acceptable as then IRR (13.21%) will exceed the required rate of return (10%).

(iv) Payback period = 6 years (- ₹ 7,00,000 - ₹ 10,00,000 + ₹ 2,50,000 + ₹ 3,00,000 + ₹ 3,50,000 + ₹ 4,00,000 + ₹ 4,00,000 = 0)

2014 - June [4] (a) Compute the Liquid Ratio from the following information for the year ended 31st March, 2014 and also interpret the result:

Particulars	₹
Land and Building	55,000
Plant and Machinery	40,000
Stock	30,000
Debtors	42,000
Bills receivable	25,000
Prepaid Expense	5,000
Cash at bank	15,000
Cash in hand	10,000
Creditors	25,000
Outstanding Salary	5,000
Bank Overdraft	3,000
Bills payable	4,000
Proposed Dividend	6,000
Long Term Liabilities	46,000
Provision for Bad debts	2,000

(6 marks)

Answer:

Calculation of Liquid Ratio

$$\text{Liquid Ratio} = \frac{\text{Cash + Near Cash Asset}}{\text{Current Liabilities}}$$

$$= \frac{\text{Cash in hand + Cash at Bank + Debtors + Bills receivable}}{\text{Creditors + O/s Salary + Bank O/P + B/P + proposed Dividend + Prov. for bad debts}}$$

$$= \frac{15{,}000 + 10{,}000 + 42{,}000 + 25{,}000}{25{,}000 + 5{,}000 + 3{,}000 + 4{,}000 + 6{,}000 + 2{,}000}$$

$$= \frac{92{,}000}{45{,}000} = 2.04$$

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

$$= \frac{\text{Stock + Debtor + B/R + Cash at Bank + Cash In Hand + Prepaid Expenses}}{\text{B/P + Bank O/D + O/S Salary + Prov. for Bad Debts + Creditor + Proposed Dividend}}$$

$$= \frac{30{,}000 + 42{,}000 + 25{,}000 + 15{,}000 + 10{,}000 + 5{,}000}{45{,}000}$$

$$= \frac{1{,}27{,}000}{45{,}000} = 2.8$$

2014 - June [5] The following information is given regarding Shaan Ltd. Some key ratios are provided for the particular industry to which Shaan Ltd. belongs. You are required to calculate the relevant ratios for Shaan Ltd., compare them with that particular industry norms and give the comments on the performance of the company.

The following balances are available from the books of accounts of Shaan Ltd. as at 31st March, 2014:

Equity Share Capital ₹ 27,00,000, 12% debentures ₹ 5,00,000, Sundry Creditors ₹ 3,80,000, bills payable ₹ 3,20,000 and other current liabilities ₹ 2,00,000, Net fixed assets ₹ 17,00,000, cash ₹ 4,00,000, Sundry Debtors ₹ 7,50,000 and stock ₹ 12,50,000.

The sales of the company for the year ending 31.03.2014 amounted to ₹ 60,00,000 and the gross profit was ₹ 17,00,000.

Industry Norms	Ratio Considered
Current Ratio (CA/CL)	2.4
Sales/Debtors	7.7
Sates/Stock	7.9
Sales/Total assets	2.39
Gross Profit Ratio	36%

(10 marks)

Answer:

$$\text{Current Ratio} = \frac{\textbf{Current Asset}}{\textbf{Current Liabilities}}$$

$$= \frac{\textbf{Cash + Debtor + Stock}}{\textbf{Sundry creditor + B/P + other C/L}}$$

$$= \frac{\textbf{4,00,000 + 7,50,000 + 12,50,000}}{\textbf{3,80,000 + 3,20,000 + 2,00,000}}$$

$$= \frac{\textbf{24,00,000}}{\textbf{9,00,000}} = 2.67$$

Comment: The ideal current ratio is 2:1, it assess the firms ability to meet its short term Liabilities. The Shaman Ltd. ratio is 2.67: 1, which is more than industry norms. Shaman Ltd. Is able to pay its current Liabilities more easily.

$$\text{Stock Turnover Ratio} = \frac{\textbf{Sales}}{\textbf{Stock}}$$

$$= \frac{\textbf{60,00,000}}{\textbf{12,50,000}} = 4.80$$

Comment: The higher ratio, the better it is since it indicate that the stock is selling quickly, Shaman Ltd. Ratio is less than Industry norms ratio. Its performance is inefficient.

$$\text{Debtor Turnover Ratio} = \frac{\textbf{Sales}}{\textbf{Debtor}}$$

$$= \frac{\textbf{60,00,000}}{\textbf{7,50,000}} = 8.00$$

Comment: The higher the ratio, the better it is since it indicates that amount from debtors are being collected more quickly. Turnover ratio of Shaman Ltd. is more than of industry norms. So the credit sale policy of management is efficient.

Asset Turnover Ratio $= \frac{\text{Sales}}{\text{Asset}}$

$= \frac{60,00,000}{17,00,000} = 3.53$

Comment: The higher the ratio the better it is. Shaman Ltd.'s Ratio is 3.53, being greater than industry norms. The management policy is efficient.

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

$= \frac{17,00,000}{60,00,000} \times 100 = 28.3\%$

Comment: Higher the ratio, the better it is. Shan Ltd. G.P. ratio is less than that of industry norms, hence Shaman Ltd. is operating inefficient in comparison to industry norms.

2014 - Dec [2] (b) The extract of balance sheets and income statements of M/s Novel Company over the last 3 years are as follows:

(₹ in thousand)

Particular	2011	2012	2013
Cash	561	387	202
Receivable	1963	2870	4051
Inventories	2031	2613	3287
Current Assets	**4555**	**5870**	**7540**
Net Fixed Assets	2581	4430	4364
Total Assets	**7136**	**10300**	**11904**
Payable	1862	2944	3613
Accruals	301	516	587
Bank Loan	250	900	1050

Current Liabilities	**2413**	**4360**	**5250**
Long term debt	500	1000	950
Share holders equity	4223	4940	5704
Total Liabilities and equity	**7136**	**10300**	**11904**
Sales	11863	14952	16349
Cost of goods sold	8537	11124	12016
Selling, general and administrative expenses	2349	2659	2993
Profit before taxes	977	1169	1340
Taxes	390	452	576
Profit after taxes	587	717	764

You are required to:

a. Prepare common size statement, and (9 marks)

b. Comment on the trends in the company's financial condition and performance. (6 marks)

Answer:

Common Size Balance Sheet of M/s Novel Company for the years 2011 to 2013

Particulars	**2011**	**2012**	**2013**
Cash	7.9	3.8	1.7
Receivables	27.5	27.8	34
Inventories	28.4	25.4	27.6
Current Assets	63.8	57	63.3
Net Fixed Assets	36.2	43	36.7
Total Assets	**100**	**100**	**100**
Payables	26.1	28.6	30.4
Accruals	4.2	5	4.9
Bank loan	3.5	8.7	8.8

Current liabilities (a)	33.8	42.3	44.1
Long term debts	7	9.7	8
Shareholders' equity	59.2	48	47.9
Long term funds (b)	66.2	57.7	55.9
Total Liabilities and equity (a)+ (b)	**100**	**100**	**100**

Common Size Income Statement of M/s Novel Company for the years 2011 to 2013

Particulars	2011	2012	2013
Sales	100	100	100
Less: Cost of goods sold	72	74.4	73.5
Gross Profit	28	25.6	26.5
Less: Selling, general and administrative expenses	19.8	17.8	18.3
Profit before tax	8.2	7.8	8.2
Less: Tax	3.3	3	3.5
Profit after tax	4.9	4.8	4.7

Analysis:

(a) The cash balance is dwindling over years 2011 to 2013 which may cause liquidity problems in future.

(b) There is sharp increase of receivables balance which may be due to inefficiency in collection of debtor's balances.

(c) The proportion of inventories to total assets remains same in year 2011 and year 2013 but the inventory has shown reduced balance in year 2012.

(d) The proportion of net fixed assets to total assets remains unchanged for years 2011 and 2013. But higher proportion is shown in year 2012.

(e) The shareholders' equity to total liabilities has sharply declined from 59.2 in 2011 to 47.9 in 2013.

(f) The proportion of long-term debt remains same in all the 3 years.

(g) The proportion of bank loan in total liabilities has increased from 3.5 in

2011 to 8.8 in 2013.

(h) The proportion of accruals to total liabilities remains almost same in all three years.

(i) The payables have increased from 26.1 to 30.4 over a period of 3 years, represents delay in making payments for creditors.

(j) There is not much of change in cost of goods sold, selling, general and administrative expenses in all three years causing uniform profit in all three years.

Statement showing Index analysis of Balance Sheet items in years 2011 to 2013

Particulars	2011	2012	2013
Cash	100	69	36
Receivables	100	146.2	206.4
Inventories	100	128.7	161.8
Current Assets	100	128.9	165.5
Net Fixed Assets	100	171.6	169.1
Total Assets	100	144.3	166.8
Payable	100	158.1	194
Accruals	100	171.4	195
Bank Loan	100	360	420
Current Liabilities	100	180.7	217.6
Long term debt	100	200	190
Shareholders' equity		117	135.1
		144.3	166.8

Statement showing Index analysis of Income Statement items in years 2011

Particulars	2011	2012	2013
Sales	100	126.0	137.8
Cost of goods sold	100	130.3	140.8
Gross Profit	100	115.1	130.3
Selling, general and administrative expenses	100	113.2	127.4
Profit before tax	100	119.7	137.2
Tax	100	115.9	147.7
Profit after tax	100	122.2	130.2

Analysis:

Index analysis shows much the same picture. Cash declined faster than total asset and current assets and receivables increased faster than these two bench marks. Inventories fluctuated, but were about the same percentage wise to total assets in 2013 as they were in 2011.

Net fixed assets increased more sharply than total assets in 2012 and then fell back into line in 2013.The sharp increase in bank loans in 2012 and 2013 and the sharp increase in long-term debts in 2012 are evident. Equity increased less than total assets, so debt increased more percentage wise. With respect to profitability, net profits increased less than sales, for the reasons indicated earlier.

2015 - June [1] {C} (a) You are analyzing the financial statements of Sky Ltd. using ratio accounting tools.

Extracts of the financial information for the year ended on 31.03.2014 are summarized as follows:

Abridged Balance Sheet as at 31.03.2014

Liabilities	₹ Lakhs	Assets	₹ Lakhs
Equity share capital	160	Fixed Assets	600
Reserves	260	Inventory	75
12% Bank Loan	200	Receivables	90
Creditors	200	Cash and Bank	55
Total	820	Total	820

Abridged Statement of profit for year ended 31.03.2014

Particulars	₹ Lakhs
Sales (all on credit)	750
Cost of Goods Sold	500
Sundry Expenses	66
Depreciation	40
Interest Expenses	24
Tax Expenses (25%)	30
Profit after tax	90

Additional Information:

Particulars	₹ Lakhs
Cash from operating activities	130
Cash used in investing activities	(50)
Cash used in financing activities	(45)

Daily operational expenses (₹ lakhs) 2; Annual loan repayment installment (₹ lakhs) 20; The management of the company claims that the liquidity position of the company is sound although the current ratio is poor.

(i) Compute Current ratio, Quick ratio, Interval Defensive ratio, working capital turnover ratio, receivables turnover ratio, creditors turnover ratio and inventory turnover ratio and examine the liquidity position of the company paying due regard to cash flow information and give your comment as to tenability of the views of the management. (7 marks)

(ii) Assess the company's ability to service debt by use of interest coverage ratio and debt service coverage ratio. (3 marks)

Answer:

(i) Current ratio = CA/CL = 220/200 =1.1;

Quick ratio = Liquid Assets/Liquid Liabilities = 145/200 = 0.725;

Interval Defensive ratio = Liquid Assets/Daily operational expenses = 145/2 = 72.5 days;

Working Capital turnover ratio = Sales/Working Capital = 750/20 = 37.5;

Receivables turnover ratio = Sales (Credit)/Receivables = 750/90 = 8.33;

Creditors turnover ratio = Cost of Goods Sold (in absence of Purchase value)/Creditors = 500/200 = 2.5;

Inventory turnover ratio = Cost of Goods Sold/ Inventory = 500/75 = 6.67.

Cash from operating activities are positive and high in magnitude (₹ lakhs) 130.

The firm is able to meet daily expenses for 72.5 days, a pretty long time. The firm enjoys long period credit from suppliers and allows short period credit to customers. It blocks investments in inventory for a period far shorter than suppliers' credit period. As a result current assets value has become relatively low in comparison to current liabilities. In spite of poor current and quick ratios the firm is not poor in liquidity. Rather the Interval Defensive ratio, turnover ratios and high operating cash flows clearly show the firm's strength in liquidity. The contention of the management that the liquidity of the firm is sound appears to be tenable.

(ii) Interest Coverage Ratio = EBIT/Interest = 144/24 = 6 times. It is sound.

Debt service coverage ratio = (EAT + Depreciation + Interest)/(Interest + Principal Loan repayment in Installment) = (90 + 40 + 24)/(24+20) = 3.5;

The firm generates cash flows 3.5 times the debt to be serviced. It is sound.

The firm is comfortably able to service its debt.

2015 - Dec [1] {C} (a) As credit manager of the bank, you have been approached by two companies for a loan of ₹ 1,00,000 for six months, with no collateral offered. Since the bank has almost exhausted its quota for loans of this type, only one of these requests can be granted. The relevant information supplied to you by the two companies is presented below:

Particulars	**Company X**	**Company Y**
Assets	(₹)	(₹)
Cash	1,70,000	3,00,000
Sundry Debtors	2,74,000	4,24,000
Stock	9,00,000	13,50,000

Total Current Assets	13,44,000	20,74,000
Other Assets	10,00,000	10,20,000
	23,44,000	30,94,000
Liabilities & Capital		
Current Liabilities	5,00,000	6,40,000
Long-term Loans	8,00,000	10,00,000
Equity Share Capital	8,00,000	12,00,000
Retained Earnings	2,44,000	2,54,000
	23,44,000	30,94,000
Additional Information		
Sales	24,00,000	17,00,000
Rate of gross profit on sales	30%	40%

Considering the above data specify the company which should be granted the credit. Explain your answer with reasons. (10 marks)

Answer:

Company X:

Gross Profit = $\mathbf{24,00,000 \times \frac{30}{100}}$ = 7,20,000

COGS = 24,00,000 - 7,20,000 = 16,80,000

(i) Current Ratio = $\mathbf{\frac{CA}{CL}} = \mathbf{\frac{13,44,000}{5,00,000}}$ = 2.688

(ii) Quick Ratio = $\mathbf{\frac{CA - Stock}{CL}} = \mathbf{\frac{13,44,000 - 9,00,000}{5,00,000}}$ = 0.888

Company Y:

Gross Profit = $\mathbf{17,00,000 \times \frac{40}{100}}$ = 6,80,000

COGS = 17,00,000 - 6,80,000 = 10,20,000

(i) Current Ratio = $\mathbf{\frac{20,74,000}{6,40,000}}$ = 3.24

(ii) Quick Ratio = $\mathbf{\frac{7,24,000}{6,40,000}}$ = 1.13

(i) & (ii) Ratios are better for Company Y which denote the capability to repay

short term liabilities. As the loan in for six months, it is a short term loan and hence Company Y should be granted credit. Also, GP Ratio is higher for Company Y which denotes that additional sales generated by bank finance will yield higher profits for Company Y.

2015 - Dec [2] (c) (i) Sunny Limited acquired 70% shares of Harry Limited on October 01, 2014 at a price of ₹ 5,00,000. The balance of Profit and Loss account of Harry Ltd. is as under:

As on	**Balance**
April 01, 2014	₹ 80,000 Debit balance
March 31, 2015	₹ 1,60,000 Credit balance

Compute net share of Sunny Limited in the capital profit of Harry Limited at the time of Consolidation. (3 marks)

(ii) Zoom Limited acquired 80% of shares of Dark Limited on March 31, 2015 for consideration of ₹ 5,20,000. The share capital of Dark Limited comprises of 4000 Equity Shares of ₹ 100 each. The capital profit and revenue profits of Dark Limited were ₹ 3 lakh and ₹ 1 lakh on the date of acquisition. Compute the amount of minority interest as shown in the Consolidated Balance Sheet as on March 31, 2015. (3 marks)

(iii) X Limited acquired 70% of equity shares of Y Limited as on 31st March, 2015 at a cost of ₹ 70 lakhs. The total assets and other liabilities of Y Limited amounted to ₹ 278.50 lakhs and ₹ 140 lakhs respectively. Y Limited declared and paid dividend @ 20% on its equity shares (face value ₹ 10) as on 31st March, 2015. X Limited purchased the shares of Y Limited @ ₹ 20 per share. Compute the amount of goodwill/capital reserve on acquisition of shares of Y Limited. (4 marks)

(iv) Your company had the following balance sheet and income statement information for 2014.

Balance sheet:	₹
Cash	20
Accounts Receivable	1,000
Inventories	5,000

Total Current Assets	6,020
Net Fixed Assets	2,980
Total Assets	9,000
	(₹)
Debt	4,000
Equity	5,000
Total Liabilities & Capital	9,000
Income Statement:	
Sales	10,000
Cost of Goods Sold	9,200
EBIT	800
Interest (10%)	400
EBT	400
Taxes (40%)	160
Net Income	240

This industry average inventory turnover is 5. You think you can change your inventory control system so as to cause your turnover to equal the industry average, and this change is expected to have no effect on either sales or cost of goods sold. The cash generated from reducing inventories will be used to buy tax—exempt securities which have a 7 percent rate of return. What will your profit margin be after the change in inventories is reflected in the income statement?

(5 marks)

Answer:

(i) Balance of Profit and Loss A/c of Harry Ltd.:

1. On 1.4.2014 (-) ₹ 80,000
2. On 31.3.2015 + ₹ 1,60,000

If x be the profit earned during the year 2014-15

then, - 80,000 + x = 1,60,000

x = 2,40,000

∴ Profit earned for 6 months (1.4.2014 to 30.9.2014) = 1,20,000
Capital profits = - 80,000 + 1,20,000 = 40,000
Share of Sunny Ltd. in Capital profits = 40,000 × 70% = ₹ 28,000

(ii) Calculation of minority interest:

Share in capital (20%)	=	80,000
Share in capital profit (20%)	=	60,000
Share in revenue profit (20%)	=	20,000
Minority Interest		**1,60,000**

(iii)

Net worth of Y Ltd. = Total Assets - other liabilities
= 278.50 - 140 = ₹ 138.5 lakhs

Cost of acquisition of shares in Y Ltd. = ₹ 70 lakhs

Dividend on shares acquired = $\frac{70}{20} \times 2$ = ₹ 7 lakhs

As dividend is for pre-acquisition period, it will be reduced from cost of investment.

Hence, adjusted cost of acquisition = 70 – 7 = ₹ 63 lakhs

X Ltd's share in Net worth of Y Ltd. = 138.5 × 70% = ₹ 96.95 lakhs

Capital Reserve = 96.95 – 63 = ₹ 33.95 lakhs.

(iv) New Inventory level = $\frac{\text{COGS}}{\text{Inventory Turnover Ratio}} = \frac{9,200}{5}$ = ₹ 1,840

Current Inventory - New Inventory = 5,000 - 1,840 = ₹ 3,160 to be invested in 7% tax free securities.

Interest = ₹ 3,160 × 7% = ₹ 221 to be added to net income.
New Net Income = Old Net Income + ₹ 221 = ₹ 240 + ₹ 221 = ₹ 461
New Profit Margin = New Net Income ÷ Sales = 461 ÷ 10,000 = 0.0461 or 4.61%

2016 - June [1] {C} (a) Answer the following:

(vi) Market price per share is ₹ 160; Dividend per share is ₹ 40 and

Earnings per share is ₹ 55, price earnings ratio will be _____.
(2 marks)

2016 - June [2] (a) Vedika Ltd. finds on 31st December, 2015 that it is short of funds with which to implement its branch expansion programme. On 1st January, 2015, it had a bank balance of ₹ 1,80,000 in its current account. From the following information, prepare a statement for the Board of Directors to show how the overdraft of ₹ 68,750 at 31st December, 2015 has arisen:

Figures as per Balance Sheet
(as on 31st December)

	2014	**2015**
	(₹)	(₹)
Fixed Assets	7,50,000	11,20,000
Stock and stores	1,90,000	3,00,000
Debtors	3,80,000	3,65,000
Bank Balance/(Overdraft)	1,80,000	(68,750)
Trade Creditors	2,70,000	3,50,000
Share Capital (in shares of ₹ 10 each)	2,50,000	3,00,000
Bills Receivable	87,500	95,000

The profit for the year ended 31st December, 2015 before charging depreciation and taxation amounted to ₹ 2,40,000. The 5,000 shares were issued on 1st January, 2015 at a premium of ₹ 5 per share. ₹ 1,37,500 was paid in March 2015 by way of income tax including tax on distribution of dividend. Dividend was paid as follows for 2014 (final) on the capital on 31-12-2014 @ 10% less tax 25%. For 2015 (interim) 5% on capital on 31st March, 2015 free of tax. (10 marks)

Table Showing Marks of Compulsory Questions										
Year	11 D	12 J	12 D	13 J	13 D	14 J	14 D	15 J	15 D	16 J
Practical					9			10	10	2
Total					9			10	10	2