Paper – 20: Financial Analysis & Business Valuation

Time Allowed: 3 hours **Full Marks:** 100

This paper contains 4 questions, representing two separate sections as prescribed under syllabus 2012. All questions are compulsory, subject to the specific guidance/ instructions stated against every question. All workings, wherever necessary, must form a part of your answer. Assumptions, if any, should be clearly stated.

Question No. 1. (Answer **all** questions. Each question carries **10 marks**)

1(a). Consider the following figures of Delta Ltd.

	2012-13	2013-14
Sales (₹)	**23,76,000**	**27,01,000**
Cost of goods sold (₹)	**18,00,000**	**24,05,000**
Units sold	**36,000**	**37,000**

Analyse the reasons for change in sale price and cost price. **[10]**

Answer:

Statement showing change

	Year		
	2012-13	**2013-14**	**Change**
1. Sales (₹)	23,76,000	27,01,000	3,25,000
2. Cost of goods sold (₹)	18,00,000	24,05,000	6,05,000
3. Gross Profit (1 - 2)	5,76,000	2,96,000	(2,80,000)
4. Units sold	36,000	37,000	1,000
5. Sales per unit (1 ÷ 4) (₹)	66	73	7
6. Cost per unit (2 ÷ 4) (₹)	50	65	15

Base year = 2012-13

1. Change in sale due to change in price = Change in price × base year quantity
   = ₹7 × 36,000 = ₹2,52,000

2. Change in sales due to change in quantity = Change in quantity × base year price
   = 1,000 × ₹66 = ₹66,000

3. Change in sales due to change in quantity-price factor = Change in price × change in quantity
   = 7 × ₹1,000 = ₹7,000

4. Change in cost of goods sold due to Change in price factor = Change in cost per unit × base year quantity
   = ₹15 × 36,000 = ₹5,40,000

5. Change in cost of goods sold due to change In quantity factor = Change in quantity × base year cost per unit
   = 1,000 × ₹50 = ₹50,000

6. Change in cost of goods sold due to change In quantity cost factor = Change in quantity × change in cost per unit
= 1,000 × ₹15 = ₹15,000

Statement accounting for change in Gross Profit

Factors	Favourable Change ₹	Unfavourable Change ₹
1. Price factor in sale	2,52,000	
2. Price factor in cost		5,40,000
3. Quantity factor in sale	66,000	
4. Quantity factor in cost		50,000
5. Quantity-price factor in sale	7,000	
6. Quantity-price factor in cost		15,000
Total	3,25,000	6,05,000
Net unfavorable change in gross profit	2,80,000	
	6,05,000	6,05,000

1(b). The Balance Sheet (Extracts) of Ignu Ltd as at 31.03.13 and 31.03.14 are presented:

Balance Sheets (Extracts) as at 31st March,

(₹ in Lakhs)

Equities & Liabilities	2013	2014	Assets	2013	2014
	₹	₹		₹	₹
Shareholders' Fund:			**Non-Current Assets:**		
Share Capital	**300.00**	**300.00**	**Freehold Property (at cost)**	**225.00**	**240.00**
Reserves	**225.00**	**240.00**	**Plant & Machinery**	**135.00**	**165.00**
Non-current Liabilities:			**(at cost less Depreciation)**		
6% Debentures (unsecured)	**75.00**	**75.00**	**Investment in shares of companies under the management (unquoted)**	**150.00**	**150.00**
Mortgage on Freehold Property	**27.00**	**14.25**	**Investment in shares of other companies (quoted) (Market value 2014 : ₹ 120 lakhs; 2013 : ₹ 150 lakhs)**	**112.50**	**112.50**
Current Liabilities:			**Current Assets:**		
Creditors	**45.00**	**45.00**	**Stock**	**52.50**	**75.00**
Proposed Dividend (Subject to deductions of tax)	**22.50**	**23.25**	**Debtors**	**45.00**	**75.00**

Provision for Taxation	**21.00**	**37.50**	**Bank**	**10.50**	**—**
Secured Overdraft	**15.00**	**82.50**			
(by a floating charge on assets)					
	730.50	**817.50**		**730.50**	**817.50**

The following additional information for the year 2013-14 is relevant:

(1) Credit Sales ₹ 675 lakhs
(2) Credit Purchases ₹ 520 lakhs
(3) Overhead ₹ 85.75 lakhs
(4) Depreciation on Plant & Machinery ₹ 17.50 lakhs
(5) Dividend for 2012-13 was paid in full
(6) Amount paid towards taxation for the year 2012-13 ₹ 21.50 lakhs

In view of Credit squeeze, the company has been asked by the Bank to reduce the overdraft substantially within six months, if possible by 50%.

You are required to prepare a Cash Flow Statement and briefly comment on the financial position of the company on the basis of information of Cash Flow Statement and suggest remedial measures to overcome the financial crises. [10]

Answer:

In the books of Ignu Ltd.
Cash Flow Statement
for the year ended 30.03.2014

(₹ in lakhs)

	₹	₹	₹
Cash Flows from Operating Activities			
Net Profit :			
Net Profit for 2013-14	240.00		
Less : Net Profit for 2012-13	225.00	15.00	
Add : Non-Operating Expenses			
Depreciation on Plant & Machinery	17.50		
Debenture Interest	4.50		
Provision for Taxation	38.00		
Proposed Dividend	23.25	83.25	
		98.25	
Less : Non-Operating Income		Nil	
		98.25	
Add : Decrease in Current Assets or Increase in Current Liabilities		Nil	
		98.25	
Less : Increase in Current Assets or Decrease in Current Liabilities			
Increase in Stock	22.50		

Increase in Debtors	30.00	52.50	
		45.75	
Less : Income Tax Paid		21.50	
Net Cash Flow for Operating Activities			24.25
Cash Flows from Investing Activities:			
Purchase of Plant and Machinery	47.50		
Purchase of Freehold Property	15.00		
Net Cash Flows from Investing Activities			(-) 62.50
Cash Flows from Financing Activities:			
Repayment of Mortgage Loan	12.75		
Payment of Interest	4.50		
Payment of Dividend	22.50		
Net Cash Flows from Financing Activities			(-) 39.75
Net Decrease in Cash or Cash equivalent			(-) 78.00
Add : Cash and cash equivalent at the beginning (₹ 10.50 lakhs - ₹ 15.00 lakhs)			(-) 4.50
Cash or Cash equivalent at the end			(-) 82.50

Plant and Machinery A/c

Dr. **Cr.**

(₹ in lakhs)

	₹		₹
To Balance b/d	135.00	By Depreciation	17.50
Bank—Purchase	47.50	Balance c/d	165.00
	182.50		182.50

Provision for Taxation A/c

Dr. **Cr.**

(₹ in lakhs)

	₹		₹
To Bank A/c	21.50	By Balance b/d	21.00
Balance c/d	37.50	Profit & Loss A/c/Reserve	38.00
	59.00		59.00

Notes:

As per AS-3, Interest on Debentures should be considered under financing activities. But interest on Mortgage Loan is treated as an item of operating activities as such loan is issued to be used for working capital purposes (since the rate of interest on such loan is not given)

Comments and Interpretation:

From the above Cash Flow Statement it becomes clear that the amount of Bank Overdraft has been taken as a result of the following : Capital Expenditure ₹ 62.50 lakhs + Repayment of Loan ₹ 12.75 lakhs and payment of Interest and Dividend over Operating Cash Flow (₹ 24.25 lakhs - ₹

4.50 lakhs - ₹ 22.50 lakhs) ₹ 2.75 lakhs = ₹ 78 lakhs. Since the bank overdraft is a costly source of finance it is not advisable to expand the firm depending on such sources. Moreover, a conservative policy should be adopted for using-long term debts which is evident from Debt-Equity Ratio $\left(\text{i.e. } \frac{₹\,89.25\text{ lakhs}}{₹\,540.00\text{ lakhs}} \times 100\right)$ = 16.53%. It is suggested that the firm may have raised funds for Capital Expenditure purposes from long-term debts. Thus, Bank Overdraft could be reduced by 50% by raising the proceeds from long-term debts.

In order to avoid the liquidity crisis in future, the firm may have to improve its quality of earning by the proper utilisation of current assets.

Question No. 2 (Answer **any two** questions. Each question carries **15 marks**)

2(a). Below are given Summaries Balance Sheet and Income Statement of ABC Ltd.:

Income Statement for the year ended 31.03.2014	
	(₹ in thousands)
Sales	**1,600**
(-) Cost of goods sold	**1,310**
Gross Margin	**290**
Less: Selling and Administrative expenses	**40**
	250
Less: Interest expense	**45**
Earnings before tax	**205**
Tax paid	**82**
Earnings per share (EPS) ₹ 3.075	**123**

Balance Sheet as at 31.03.2014 (₹ in thousands)

Equity & Liabilities	**₹**	**Assets**	**₹**
Shareholders' Fund:		**Non-current Assets:**	
Paid up Capital (40,000		**Net Fixed Assets**	**800**
Shares of ₹ 10 each fully paid)	**400**	**Current Liabilities:**	
Retained Earnings	**120**	**Inventory**	**400**
Non-current Liabilities:		**Debtors**	**175**
Debenture	**700**	**Marketable Securities**	**75**
Current Liabilities:		**Cash**	**50**
Creditors	**180**		
Bills Payable	**80**		
Other Current Liabilities	**20**		
	1,500		**1,500**

Market Price per share ₹ 15			
Industry's average ratios are :			
Current ratio			**2.4**
Quick ratio			**1.5**
Sales to Inventory			**8**
Average Collection Period			**36 days**
Times Interest Earned			**6**
Profit margin			**7%**
Price to Earning Ratio			**15**
Return on total assets			**11%**

ABC Ltd. would like to borrow ₹ 5,00,000 from a bank for less than a year. Evaluate the firm's current financial position by calculating ratios that you feel would be useful for the banks evaluation. [15]

Answer:

Before granting short term loan, the bank should consider liquidity position, profitability position and interest payment ability of the firm. So let us calculate the requisite ratios for this purpose:

Ratio	Formula used	Value of ratio of ABC Ltd.	Industry's average ratio	Remarks
(A) Liquid Ratio				
(i) Current Ratio	$\frac{\text{Current Assets}}{\text{Current Liabilities}}$	$\frac{₹700}{₹280} = 2.5$	2.4	Above Standard
(ii) Quick Ratio	$\frac{\text{Current Assets} - \text{Inventory}}{\text{Current Liabilities}}$	$\frac{₹700 - ₹400}{₹280}$ = 1.07	1.5	Below Standard
(iii) Inventory Turnover ratio	$\frac{\text{Cost of goods sold}}{\text{Inventory}}$	$\frac{₹1,310}{₹400} = 3.28$	8	Below Standard
(iv) Average Collection Period	$\frac{\text{Debtors}}{\text{Sales}} \times 365 \text{days}$	$\frac{₹175}{₹1,600} \times 365$ = 40 days	36 days	4 days longer
(B) Profitability Ratio				
(i) Profit margin	$\frac{\text{Net income after tax}}{\text{Sales}} \times 100$	$\frac{₹123}{₹1,600} \times 100$ = 7.69%	7%	Above the Standard
(ii) Price to Earnings ratio	$\frac{\text{Market Price Per Share}}{\text{Earning per Share}}$	$\frac{₹15}{₹3.075} = 4.88$	15	Below Standard

(iii) Return on total Assets	$\frac{\text{Net Profit after tax}}{\text{Total assets}}$	$\frac{₹123}{₹1,500}\times 100$ = 8.2%	11%	Below Standard
(C) Coverage ratio				
(i) Interest Coverage Ratio	$\frac{\text{Profit before interest and tax}}{\text{Interest}}$	$\frac{₹250}{₹45}$ = 5.56 times	6	Near to Standard

Comments on the liquidity, profitability and interest payment capacity of ABC Ltd.:

Liquidity Position: The current ratio of ABC Ltd. is little-bit higher than industry's average ratio. So it may be thought that liquidity position of the firm is sound. But if we look at the quick ratio, we will see that the position is not at all satisfactory. The quick ratio of ABC Ltd. is lower than industry's average ratio by as much as $\left(\frac{1.5-1.07}{1.5}\times 100\right)$ = 28.67%. Clearly this has resulted in due to high inventory holding which is around 57% of total current assets. That inventory holding is disproportionately high which is evident from inventory turnover ratio. While the industry's average inventory turnover ratio is 8, it is only 3.28 in case of ABC Ltd. This poor turnover ratio indicates a very inefficient inventory management. The company is holding either excessive inventory than warranted by volume of production or a huge quantity of slow-moving and non-moving inventory. The liquidity position of ABC Ltd. is further strained by 4 days longer debt collection period than the industry's average.

Profitability Position: The Profit margin ratio of ABC Ltd. is slightly better than industry's average. But the return on total assets of the company is far below the industry's average. It is only 8.2% while it should be around 11% as per industry norm. It indicates that ABC Ltd. is less efficient in utilising its assets compared to industry average. So to make the return on total assets at par with industry average, ABC Ltd. has to either reduce the investments in total assets or increase sales volume. The price-earnings ratio of ABC Ltd. is too lower compared with the industry's average. It indicates that investors' evaluation about the prospect of the firm is very poor.

Interest Payment Capacity: Interest payment capacity of ABC Ltd. is satisfactory as the Interest Coverage Ratio is near to industry's average.

Conclusion: It appears that if inventory of ABC Ltd. is properly managed and debt collection becomes more prompt, the necessity of the short term loan may not exist. Moreover, it should not be lost sight of that current ratio and quick ratio will be further worsened if this loan is granted. They will be then as follows:

$$\text{Current ratio} = \frac{₹700 + ₹500}{₹280 + ₹500} = 1.54$$

$$\text{Quick Ratio} = \frac{₹800}{₹780} = 1.03$$

So before granting loan bank should consider the above facts very carefully.

2(b)(i). The following informations are related to financial position of Rungta Ltd. for 3 years which ended on 31st March every year:

Particulars	2012 (₹)	2013 (₹)	2014 (₹)
Share capital	1,40,000	1,80,000	1,90,000
Current Liabilities	40,000	?	?
Working Capital	60,000	50,000	1,40,000
Long-term Loan	1,00,000	?	1,20,000
Fixed assets	2,40,000	2,50,000	2,35,000
Net Worth	2,00,000	2,20,000	2,55,000
Current Assets	?	1,20,000	2,00,000
Capital Employed	3,00,000	?	?
Reserves & Surplus	?	40,000	65,000

You are required to find out the values of the missing figures and prepare a Vertical Trend Balance Sheet taking 2011-12 as the base and also interpret the result. [4+3+3]

Answer:

Vertical Trend Balance Sheet
(Base Year 2011-2012)

	2011-12		2012-13		2013-14	
	Amount (₹)	Trend %	Amount (₹)	Trend %	Amount (₹)	Trend %
Equity & Liabilities:						
Shareholders' Funds:						
Share Capital [A]	1,40,000	100	1,80,000	128.57	1,90,000	135.71
Reserve & Surplus [B]	60,000	100	40,000	66.67	65,000	108.33
Net Worth [C=A+B]	2,00,000	100	2,20,000	110	2,55,000	127.50
Non-current Liabilities:						
Long-term Loan [D]	1,00,000	100	80,000	80	1,20,000	120
Capital Employed [E=C+D]	3,00,000	100	3,00,000	100	3,75,000	125
Current Liabilities [F]	40,000	100	70,000	175	60,000	150
Total	**3,40,000**	**100**	**3,70,000**	**108.82**	**4,35,000**	**127.94**
Assets:						
Non-current Assets:						
Fixed Assets	2,40,000	100	2,50,000	104.17	2,35,000	97.92
Current Assets	1,00,000	100	1,20,000	120	2,00,000	200
Total	**3,40,000**	**100**	**3,70,000**	**108.82**	**4,35,000**	**127.94**

Notes:

(i) Computation of Missing Figures for 2011-12:
Reserve & Surplus: Net Worth – Share Capital = ₹2,00,000 - ₹1,50,000 = ₹50,000
Current Assets = Working Capital + Current Liabilities = ₹60,000 + ₹40,000 = ₹1,00,000

(ii) Computation of Missing Figures for 2012-13:
Current Liabilities = Current Assets – Working Capital = ₹1,20,000 - ₹50,000 = ₹70,000

Capital Employed = Fixed Assets + Working Capital = ₹2,50,000 + ₹50,000 = ₹3,00,000
Again, Capital Employed = Net Worth + Long-term Loan
Long-term Loan = Capital Employed - Net Worth = ₹3,00,000 - ₹2,20,000 = ₹80,000

(iii) Computation of Missing Figures for 2013-14:
Current Liabilities = Current Assets – Working Capital = ₹2,00,000 - ₹1,40,000 = ₹60,000
Capital Employed = Net Worth + Long-term Loan = ₹2,55,000 + ₹1,20,000 = ₹3,75,000.

Interpretation:

1. Although the reserve & surplus has decreased in 2012-13 but increased significantly in the year 2013-14. The share capital has also increased in both the years. As a result, the net worth has also increased significantly in the last year.
2. The requirement of long-term loan is to some extent lower in 2012-13 than 2011-12 but increased in 2013-14. The current liabilities is increased heavily in 2012-13 but after that slightly decreased.
3. The fixed assets have gone up marginally in 2012-13 but go down to 97.92% in 2013-14. The position of current assets have increased significantly.

2(b)(ii). Emmie Ltd. has a machine having an additional life of 5 years, which costs ₹1,00,000 and which has a book value of ₹25,000. A new machine costing ₹2,20,000 is available. Though its capacity is same as that of the old machine, it will mean a saving in variable costs to the extent of ₹ 70,000 p.a. The life of the machine will be 5 years at the end of which it will have a scrap value of ₹40,000. The rate of income tax is 60% and Emmie Ltd. does not make an investment, if it yields less than 12%. The old machine, if sold, will fetch ₹10,000.

Advise Emmie Ltd. whether the old machine should be replaced or not.

Note:
P.V. of ₹ 1 receivable annually for 5 years at 12% = 3.605
P.V. of ₹ 1 receivable at the end of 5 years at 12% =0.567
P.V. of ₹ 1 receivable at the end of 1 year at 12% = 0.893 **[5]**

Answer:
Statement Showing the Net Present Value of New Machine

	₹	₹
Cash Inflow		
Saving in Variable Cost		70,000
Less: Dep. on new machine ₹ $\left(\frac{2,20,000-40,000}{5}\right)$	36,000	
Less: dep. On old machine ₹ $\left(\frac{25,000}{5}\right)$	5,000	31,000
Net Profit		39,000

Less: Tax @ 60%		23,400
Net Inflow/ saving after Tax		15,600
Add: depreciation		31,000
∴ Annual Cash inflow		46,600

Now,

Particulars	₹
P.V. of Cash inflow for 5 years = ₹46,600 x 3.605	1,67,993
P.V. of scrap value at the end of 5 years = ₹40,000 x 0.567	22,680
P.V. of total cash inflow	1,90,673
Less: P.V. of cash outflow (2,20,000 – 10,000)	2,10,000
Net Present Value	(-) 19,327

Since, the NPV is negative; it is not profitable to install the new machine. The old machine should not be replaced i.e. it should be continued.

2(c)(i). The following figures apply to a small manufacturing company:

Particulars	Amount (₹)
Annual sales for the previous year	**2,30,000**
Profit after tax for the previous year	**13,548**
Budgeted annual sales for the next year	**2,42,000**
Budgeted profit after tax for the next year	**14,000**

In the first of the two years, the average total assets amounted to ₹2,00,000, and are estimated to be ₹2,20,000 for the next year.

Assuming full budget realization and taking turnover into account, what alteration will take place in the ratio representing return on capital employed and what are the reasons? [5]

Answer:

$$\frac{\text{Profit}}{\text{Sales}} \times \frac{\text{Sales}}{\text{CapitalEmployed}} = \frac{\text{Profit}}{\text{CapitalEmployed}}$$

Previous year $\frac{13,548}{2,30,000} \times 100 \times \frac{2,30,000}{2,00,000} \times 100 = \frac{13,548}{2,00,000} \times 100$

5.89% x 115% x = 6.77%

Next year $\frac{14,000}{2,42,000} \times 100 \times \frac{2,42,000}{2,20,000} \times 100 = \frac{14,000}{2,20,000} \times 100$

5.79% x 110% x = 6.36%

The reasons for the change in the ratio of return on capital employed, i.e., from 6.77 per cent to 6.36 per cent are:

I. The profit to turnover ratio has decreased from 5.89 per cent to 5.79 per cent representing a very slight declination.
II. The capital turnover ratio has declined significantly from 115 per cent to 110 per cent. Although sales have improved, the additional capital employed has not resulted in a proportionate increase in sales this will be clear from the following:

Increase in capital employed by ₹ 20,000 i.e., 10 per cent on original capital.

Increase in sales ₹ 12,000 i.e., 5.2 per cent over previous year's sales.

Again, if the additional return on additional capital employed is compared with the previous year's return on capital employed, the following result will be obtained:

$$\frac{\text{Addl. Profit}}{\text{Addl. Capital Employed}} \text{x}100 = \frac{₹452}{20,000} \text{x}100 = 2.26 \text{ per cent}$$

When the amount of capital employed is computed on the basis of the assets side of the balance sheet, the following adjustments should be made:

1. Intangible assets like goodwill, patents, trademarks, etc. should be excluded unless they have definite market values.
2. Fictitious assets, e.g., preliminary expenses, cost of issue of share/debentures, deferred advertisement expenses, should be excluded.
3. Idle or unused assets, e.g., plant and machinery, excess cash and bank balance, if any, should not be taken into account.
4. Obsolete stock items and debts, which are likely to become had should be deducted from inventories and debtors respectively.

While computing profit, extraneous and fortuitous expenditure and income and abnormal losses and gains should be excluded.

The ROCE ratio is the indicator of the profitability or otherwise of a firm. In other words, the higher the return, the more profitable is the position of the firm, and vice versa.

2(c)(ii). A company has an operating leverage of leverage 1.1 as against 1.25 during the previous year. If the current fixed cost is 25% more than that of the previous year, to what extent has the contribution earned by the firm changed over the previous year?

[5]

Answer:

$$\text{Operating Leverage} = \frac{\text{Contribution (C)}}{\text{Contribution} - \text{Fixed cost (F)}}$$

Last year,

$$1.25 = \frac{C}{C-F}$$

1.25 (C-F) = C

1.25C – 1.25F = C
1.25C – C = 1.25F
0.25C = 1.25F
C = 5F

Current year,

$$1.10 = \frac{C}{C - 1.25F}$$

1.10 (C - 1.25F) = C
1.10C – 1.375F = C
1.10C – C =1.375F
0.10C = 1.375F
C = 13.75F

Increase in contribution in current year over last year:

$$= \frac{\text{Current year contribution} - \text{Last year contribution}}{\text{Last year contribution}}$$

$$= \frac{13.75F - 5F}{5F} \times 100$$

$$\frac{8.75F}{5F} \times 100 = 175\%$$

Therefore, 175% increase in contribution over last year.

2(c)(iii). What is Financial Modelling? State the attributes of a good financial model.

$\left[2\frac{1}{2} + 2\frac{1}{2}\right]$

Answer:

Financial modeling is the task of building a financial model, or the process of using a financial model for financial decision making and analysis. It is an abstract representation of a financial decision making situation. It is used to do historical analysis of a company's performance, and to do projections of its financial performance into the future. Financial Modeling is not just for the Accountant or Financial Consultant, who are called upon to develop financial projections, but also for business owners and managers.

Attributes of a Good Financial Model:

A model is considered to be good if it has the following attributes:

(i) Realistic - Assumptions, relationships, and inputs must be realistic so that the outputs are useable.

(ii) Error Free - harder than it looks.

(iii) Flexible - This is a two edged sword. Develop the model to be easy and error free, and then add elements of flexibility. Experience will tell you when a model gets too complicated and should be segregated into separate models for separate purposes.

(iv) Easy to use - Use clear labels and descriptions.

(v) Easy to understand - A financial model is only as good as the analyst using it.

Question No. 3. (Answer **all** questions. Each question carries **10 marks**)

3 (a). Following is the Profit and Loss Account and Balance Sheet for M/s Henry Ltd.

(₹ in lakhs)

	2013	2014
Turnover	**652**	**760**
Pre-tax accounting profit	**134**	**168**
Taxation	**46**	**58**
Profit after tax	**88**	**110**
Dividends	**30**	**36**
Retained earnings	**58**	**74**

Balance Sheet extracts are as follows:

(₹ in lakhs)

	2013	2014
Fixed Assets	**240**	**312**
Net current assets	**260**	**320**
Total	**500**	**632**
Equity Share holders funds	**390**	**472**
Medium and long-term bank loan	**110**	**160**

The Companies performance in regard to turnover had increased by 17% along with increase in pre-tax profit by 25% but shareholders are not satisfied by the company's preference in the last 2 years. You are required to calculate economic value added as suggested by M/s. Stern Stewerts & Co., USA, so that reasons of non-satisfaction can be evaluated. You are also given

SN.	Particulars	2013	2014
1.	**Pre-tax cost of debt**	**9%**	**10%**
2.	**Cost of equity**	**15%**	**17%**
3.	**Tax rate**	**35%**	**35%**
4.	**Interest expense**	**₹ 8**	**₹ 12**

[10]

Answer:

Calculation of ROOC:

(₹ in lakhs)

NOPAT	2013	2014
PBT	134	168
Add: Intt. Expenses	8	12
	142	180
Less: Taxes @ 35%	49.7	63

NOPAT (A)	92.3	117
Operating Capital		
Equity Shareholder's Funds	390	472
Long Term Debt	110	160
Operating Capital(B)	500	632
ROOC = A/BX100	18.46%	18.52%

Calculation of WACC	2013	2014
Kd	9%(1-0.35) x 110/500	10%(1-0.35) x 160/632
	1.287%	1.645%
Ke	15% x 390/500	17% x 472/632
	11.7%	12.7%
	12.99%	14.34%
EVA		
ROOC	18.46%	18.51%
Less: WAAC	12.99%	14.34%
Spread	5.47%	4.17%
EVA = Spread x Op. Cap.	2,735 Lakhs	2635.44 Lakhs

Analysis: Since EVA has declined in Year 2014 by 99.56 Lakhs this can be attributed as reason for non-satisfaction.

3 (b). Khan Ltd. wishes to acquire Putul Ltd. The shares issued by the two companies are 10,00,000 and 5,00,000 respectively:

(1) Calculate the increase in the total value of Putul Ltd. resulting from the acquisition on the basis of the following conditions:

Current expected growth rate of Putul Ltd.	**7%**
Expected growth rate under control of Khan Ltd., (without any additional capital investment and without any change in risk of operations)	**8%**
Current Market price per share of Khan Ltd.	**₹ 100**
Current Market price per share of Putul Ltd.	**₹ 20**
Expected Dividend per share of Putul Ltd.	**₹ 0.60**

(2) On the basis of aforesaid conditions calculate the gain or loss to shareholders of both the companies, if Khan Ltd. were to offer one of its shares for every four shares of Putul Ltd.

(3) Calculate the gain to the shareholders of both the Companies, if Khan Ltd. pays ₹ 22 for each share of Putul Ltd., assuming the P/E Ratio of Khan Ltd. does not change after the merger. EPS of Khan Ltd. is ₹ 8 and that of BCD is ₹ 2.50. It is assumed that Khan Ltd. invests its cash to earn 10%. [3+3+4]

Answer:

(1) For Putul Ltd., before acquisition

The cost of capital of Putul Ltd. may be calculated by using the following formula:

$$\frac{\text{Dividend}}{\text{Price}} + \text{Growth\%}$$

Cost of Capital i.e., Ke = (0.60/20) + 0.07 = 0.10

After acquisition g (i.e. growth) becomes 0.08

Therefore, price per share after acquisition = 0.60/(0.10 - 0.08) = ₹30

The increase in value therefore is = ₹(30 - 20) x 5,00,000 = ₹50,00,000/-

(2) To shareholders of Putul Ltd. the immediate gain is ₹100 – ₹20 x 4 = ₹20 per share.

The gain can be higher if price of shares of Khan Ltd. rise following merger which they should undertake.

To Khan Ltd. shareholders	(₹ in lakhs)
Value of Company now	1,000
Value of Putul Ltd.	150
	1,150
No. of shares	11.25
∴Value per share (1,150/11.25)	₹ 102.22

Gain to shareholders of Putul Ltd. = ₹ 102.22 – ₹ (4 x 20) = ₹22.22

Gain to shareholders of Khan Ltd. = ₹ 102.22 – ₹ 100.00 = ₹2.22

(3) Gain to shareholders of Khan Ltd:-

Earnings of Putul Ltd. (5,00,000 x 2.50) =	₹ 12,50,000
Less: Loss of Earning in cash (5,00,000 x ₹22 x 0.10)	(₹ 11,00,000)
Net Earning	₹ 1,50,000
Number of Shares	10,00,000
Net increase in Earnings Per Share	0.15

P/E ratio of Khan Ltd. = 100/8 = 12.50

Therefore, Gain per share of shareholders of Khan Ltd. = 0.15 x 12.50 = ₹ 1.88

Gain to the shareholders of Putul Ltd. ₹(22 - 20) = ₹2 per share.

Question No. 4. (Answer **any two** questions. Each question carries **15 marks**)

4(a)(i). Shah Ltd had earned a PAT of ₹48 Lakhs for the year just ended. It wants you to ascertain the value of its business, based on the following information.

(1) Tax Rate for the year just ended was 36%. Future Tax rate is estimated at 34%.

(2) The Company's Equity Shares are quoted at ₹120 at the Balance Sheet date. The Company had an Equity Capital of ₹100 Lakhs, divided into Shares of ₹50 each.

(3) Profits for the year have been calculated after considering the following in the P & L Account:-

- **Subsidy ₹2 Lakhs received from Government towards fulfillment of certain social obligations. The Government has withdrawn this subsidy and hence, this amount will not be received in future.**
- **Interest ₹8 Lakhs on Term Loan. The final instalment of this Term Loan was fully settled in the last year.**
- **Managerial Remuneration ₹15 Lakhs. The Shareholders have approved an increase of ₹6 Lakhs in the overall Managerial Remuneration, from the next year onwards.**
- **Loss on sale of Fixed Assets and Investments amounting to ₹8 Lakhs. (Ignore Tax Effect thereon). [8]**

Answer:

Computation of Future Maintainable Profits:

Particulars	**₹ Lakhs**
Profit after Tax for the year just ended	48,00,000
Add: Tax Expense (Tax is 36%, So PAT = 64%, Hence , Tax = 48,00,000 × 36/64)	27,00,000
Profit before Tax for the year just ended	**75,00,000**
Add/ (Less): Adjustments in respect of Non-Recurring items	
Subsidy Income not received in future	(2,00,000)
Interest on Term Loan not payable in future, hence saved	8,00,000
Additional Managerial Remuneration	(6,00,000)
Loss on Sale of Fixed Assets and Investments (non-recurring)	8,00,000
Future Maintainable Profits before Tax	**83,00,000**
Less: Tax Expense at 34%	28,22,000
Future Maintainable Profits after Tax Equity Earnings	**54,78,000**

Computation of Capitalization Rate and Value of Business:

Particulars	
Profit after Tax for the year just ended	₹48 Lakhs
Number of Equity Shares (₹100 Lakhs ÷ ₹50 per Share)	2 Lakhs
Earnings Per Share (EPS) = PAT ÷Number of Equity Shares	₹24
Market Price per Share on Balance Sheet Date	₹120
Price Earnings Ratio = MPS ÷EPS	5

Capitalization Rate = 1 ÷ PE Ratio	20%
Value of Business = Future Maintainable Profits ÷ Capitalization Rate = ₹54.78 Lakhs ÷ 20%	**₹273.90 Lakhs**

4(a)(ii). What are the steps of formulating a strategy? [3]

Answer:

Strategic formation is a combination of three main processes which are as follows:

(1) Performing a situation analysis, self-evaluation and competitor analysis: both internal and external; both micro-environmental and macro-environmental.

(2) Concurrent with this assessment, objectives are set. These objectives should be parallel to a time-line; some are in the short-term and others on the long-term. This involves crafting vision statements (long term view of a possible future), mission statements (the role that the organization gives itself in society), overall corporate objectives (both financial and strategic), strategic business unit objectives (both financial and strategic), and tactical objectives.

(3) These objectives should, in the light of the situation analysis, suggest a strategic plan. The plan provides the details of how to achieve these objectives.

4(a)(iii). Following information is obtained from Pankaj Ltd.

Opening Stock	**Finished goods**	**1,000 Kg**	**₹ 25,000**
	Raw material	**1,100 Kg**	**₹ 11,000**
Purchases		**10,000Kg**	**₹1,00,000**
Labour			**₹ 76,500**
Overheads (fixed)			**₹75,000**
Sales		**10,000Kg**	**₹ 2,80,000**
Closing Stock	**Raw materials**	**900 Kg**	
	Finished goods	**1200 Kg**	

The expected production for the year was 15,000 Kg of the finished product. Due to fall in market demand, the sales price for the finished goods was ₹ 20 per Kg. and the replacement cost for the material was ₹ 9.50 per Kg on the closing day. You are required to calculate the closing stock as on that date. Compute closing stock as on that date. [4]

Answer:

Computation of cost of closing stock (₹)

Cost of purchase	1,02,000

Direct labour	76,500
Fixed overhead (75,000 ×10,200)/15,000	51,000
Cost of production	2,29,500
Cost of closing stock per unit (2,29,500/10,200)	22.50
Net Realisable Value per unit	20.00

Since net realisable value is less than cost, closing stock will be valued at ₹ 20.
As NRV of the finished goods is less than its cost, relevant raw materials will be valued at replacement cost i.e ₹ 9.50

Therefore, value of closing stock: Finished goods (1200 × 20) ₹ 24,000
(+)Raw Material (900 × 9.50) ₹ 8550
Total: ₹ 32,550

4(b)(i). Given – (1) Future maintainable Profit before Interest = ₹125 Lakhs; (2) Normal Rate of Return on Long Term Funds is 19% and on Equity Funds is 24%; (3) Long Term Funds of the Company is ₹320 Lakhs of which Equity Funds is ₹210 Lakhs; (4) Interest on Loan Fund is 18%. Find out leverage effect on Goodwill if tax rate = 30%. [6]

Answer:

Long Term Loan Funds = Total Long term Funds Less Equity Funds = 320 – 210 = ₹110 Lakhs.
Interest at 18% thereon = ₹110 Lakhs x 18% = ₹19.80 Lakhs.

Computation of Future Maintainable Profit (₹ Lakhs)

Particulars	Owners Funds	Total Funds
Profit Before Interest	125.00	125.00
Less: Interest on Long Loans	19.80	N.A
Future maintainable Profit before Tax	105.20	125.00
Less: Tax Expense at 30%	31.56	37.50
Future Maintainable Profits after Tax	**73.64**	**87.50**

Computation of Goodwill under different approaches (₹ Lakhs)

Particulars	Owners Funds	Total Funds
(I) Future Maintainable Profits after Tax	73.64	87.50
(II) Normal Rate of Return	24%	19%

(III) Normal Capital Employed = (I÷II)	306.83	460.52
(IV) Actual Capital Employed (given)	210.00	320.00
(V) Goodwill = (III – IV)	**96.83**	**140.52**

Hence, Leverage Effect on Goodwill = ₹140.52 - ₹96.83 = ₹ **43.69 Lakhs**

4(b)(ii). Shyam Ltd. has announced issue of warrants on 1:1 basis for its equity share holders. The current price of the stock ₹10 and warrants are convertible at an exercise price of ₹11.71 per share. Warrants are detachable and are trading at ₹3. What is the minimum price of the warrant? What is the warrant premium? Now had the current price been ₹16.375, what is the minimum price and warrant premium? (Consider warrants are tradable at ₹9.75). [4]

Answer:

$$Minimum price = \begin{pmatrix} Market price of \\ common stock \end{pmatrix} - \begin{pmatrix} Exercise \\ Price \end{pmatrix} = (₹10.00 - 11.71) \times 1.0 = ₹1.71$$

Thus, the minimum price on this warrant is considered to be zero, because things simply do not sell for negative prices.

Warrant premium = Market price of warrant - Minimum price of warrant = ₹3 - 0 = ₹3

Minimum price = (Market price of common stock - Exercise price) × (Exercise ratio)

= (₹16.375 - 11.71) x 1.0

= ₹4.665

Warrant premium = Market price of warrant - Minimum price of warrant

= ₹9.75 - 4.665 = ₹5.085

4(b)(iii). ABC reported earnings per share of ₹ 2.40 in 2013, and paid dividends per share of ₹ 1.06. The earnings had grown 7.5% a year over the prior five years, and were expected to grow 6% a year in the long term (starting in 2014). The stock had a beta of 1.05 and traded for ten times earnings. The Treasury bond rate was 7%.

(1) Estimate the P/E Ratio for ABC.

(2) What long term growth rate is implied in the firm's current P/E ratio?

(3) What is the value of an equity share if P/E is 8 (assuming current EPS)? [2+2+1]

Answer:

(1) Payout Ratio = 1.06/₹2.40 = 44.17 %
Expected Growth Rate = 6%
Cost of Equity = 7% + 1.05 × 5.5% = 12.775%
P = D/(k-g)
P/E = D/E / (k-g) = Payout / (k-g)
P/E Ratio = (0.4417 × 1.06) / (0.12775 - 0.06) = 6.91

(2) The stock is trading at ten times earnings.

P/E Ratio =10 = 0.4417 (1+g) / (0.12775-g)
Solving for g in this equation,
g = (1.2775 - 0.4417)/10.4417 = 8.00%

(3) The value of equity share = P/E x EPS = 8 x 2.4 = ₹19.20

4 (c). Sundar Manufacturing Company Limited's Operating Profits and Operating Capital Employed during last five years are –

(₹ in Lakhs)

Particulars	Operating Profit	Opening Capital	Closing Capital
2008 - 2009	**410**	**4,000**	**6,000**
2009-2010	**690**	**6,000**	**7,000**
2010-2011	**800**	**7,000**	**9,000**
2011-2012	**1500**	**9,000**	**10,000**
2012-2013	**1800**	**10,000**	**12,000**

The Company is expected to commission a new project in April 2013 at a cost of ₹ 9,000 Lakhs, which would generate operational flow amounting to ₹ 1,200 Lakhs p.a. for atleast 4 years. Moreover the Company expects a 2% annual growth of existing profits over the next 4 years. Industry Average Rate of Return is 6% p.a.

Determine the Company's Goodwill taking 4 years purchase of Discounted Super Profit. The Company is in 25% tax bracket. Consider 5% Capital Growth and 10% WDV depreciation from April 2013 onwards. 60% of Capital Employed comprise of depreciable Fixed Assets. Use 10% Discount Factor.

Also assume that the Company has the following Capital Structure as on 31.03.2013 - (a) Equity Share Capital (₹ 10 each) = ₹ 5,000 Lakhs, (b) Reserves and Surplus = ₹ 4,000 Lakhs, (c) 14% Debentures = ₹ 3,000 Lakhs.

The funds for the new project (₹ 9,000 Lakhs) are to be raised by issue of shares and availing loans. The Company wants to maintain the existing Debt-Equity Ratio. It can arrange for 16% Term Loan.

How much maximum premium should the Company fix for its new Equity Issue? Assume that the Company desires to link Premium to the Intrinsic Value of Shares after taking into account the Value of Goodwill. [15]

Answer:

(i) Computation of Depreciation (₹ Lakhs)

Year	Opening Balance	New Project	Additions at 5% of Opg Bal.	Gross Balance	Fixed Assets at 60%	Depreciation at 10%	Closing Balance
1	**2**	**3**	**4**	**5=2+3+4**	**6**	**7 = 6 x 10%**	**8 = 5-7**
2013-14	12,000	9,000	600	21,600	12,960	1,296	20,304
2014-15	20,304	-	1,015	21,319	12,792	1,279	20,040

2015-16	20,040	-	1,002	21,042	12,625	1,262	19,780
2016-17	19,780	-	989	20,769	12,461	1,246	19,523

Notes:

- Since Capital Growth is 5%, additions are made at 5% of the Opening Balance, for every year. Alternatively, for Year 2013-2014, 5% growth can be computed on Opening Capital **plus** New Project Cost, since New Project cost is incurred in the year beginning itself.
- Depreciation is provided at 10% on the Closing Balance in Fixed Assets for a particular year.

(ii) Computation of Future Maintainable Profits (₹ Lakhs)

Year	Operating Income			Depreciation (WN 1)	Taxable Income	Tax at 25%	Maintainable Profit
	Existing	Additional	Total				
1	2	3	4=2+3	5	6 = 4-5	7=6x25%	8 = 6-7
2013-14	(1,800+2%)=1,836	1,200	3,036	1,296	1,740	435	1,305
2014-15	(1,836+2%)=1,873	1,200	3,073	1,279	1,794	449	1,345
2015-16	(1,873+2%)=1,910	1,200	3,110	1,262	1,848	462	1,386
2016-17	(1,910+2%)=1,948	1,200	3,148	1,246	1,902	476	1,426

Note:

It is assumed that the Operating Profits given is excluding Interest on Loans Borrowed.

(iii) Computation of Future Average Capital Employed (₹ Lakhs)

Year	Opening Capital Employed	Closing Capital Employed	Average Capital Employed	Normal Rate of Return at 6%
2013-14	12,000 + 9000 = 21,000	20,304	20,652	1,239
2014-15	20,304	20,040	20,172	1,210
2015-16	20,040	19,780	19,910	1,195
2016-17	19,780	19,523	19,651	1,179

Note:

Since new project investment is made in the beginning of the year itself, it is considered as part of Opening Capital Employed for computing Average Capital Employed.

(iv) Computation of Discounted Super Profits and Goodwill (₹ Lakhs)

Year	Maintainable Profits	Normal Profit	Super Profit	PV Factor	Disc. Super Profit
2013-14	1,305	1,239	66	0.9091	60.00
2014-15	1,345	1,210	135	0.8264	111.56
2015-16	1,386	1,195	191	0.7513	143.50
2016-17	1,426	1,179	247	0.6830	168.70
Total = Discounted Super Profits for 4 Years = Goodwill					483.76

(v) Funding Pattern for the new Project (₹ Lakhs)

i. Present Debt Equity Ratio: $\frac{\text{Debt}}{\text{Equity}} = \frac{₹3,000}{(₹5,000 + ₹4,000)}$	0.33 or 1:3

(II) Amount required for the Project	₹9,000 Lakhs
(III) Amount to be raised by way of Debt of 16% Term Loan = ₹9,000 Lakhs x1/4	₹2,250 Lakhs
(IV) Amount to be raised by way of Equity Issue = ₹ 9,000 Lakhs x 3/4	₹6,750 Lakhs

(vi) Computation of Intrinsic Value of Share and Share Premium

Particulars	₹ Lakhs
Equity Share Capital	5,000.00
Reserves	4,000.00
Add: Goodwill	483.76
Net Worth of Equity Holders	9,483.76
Number of Equity Shares (Lakhs)	500
Intrinsic Value Per Share $\frac{₹9,483.76\ Lakhs}{500\ Lakhs}$ i.e. Issue Price of New Equity	₹ 18.97
Less: Face Value of each Equity Share	₹ 10.00
Premium on Fresh Issue	₹8.97