PAPER – 20: FINANCIAL ANALYSIS & BUSINESS VALUATION

The following table lists the learning objectives and the verbs that appear in the syllabus learning aims and examination questions:

	Learning objectives	Verbs used	Definition
LEVEL C	KNOWLEDGE What you are expected to know	List	Make a list of
		State	Express, fully or clearly, the details/facts
		Define	Give the exact meaning of
	COMPREHENSION What you are expected to understand	Describe	Communicate the key features of
		Distinguish	Highlight the differences between
		Explain	Make clear or intelligible/ state the meaning or purpose of
		Identity	Recognize, establish or select after consideration
		Illustrate	Use an example to describe or explain something
	APPLICATION How you are expected to apply your knowledge	Apply	Put to practical use
		Calculate	Ascertain or reckon mathematically
		Demonstrate	Prove with certainty or exhibit by practical means
		Prepare	Make or get ready for use
		Reconcile	Make or prove consistent/ compatible
		Solve	Find an answer to
		Tabulate	Arrange in a table
	ANALYSIS How you are expected to analyse the detail of what you have learned	Analyse	Examine in detail the structure of
		Categorise	Place into a defined class or division
		Compare and contrast	Show the similarities and/or differences between
		Construct	Build up or compile
		Prioritise	Place in order of priority or sequence for action
		Produce	Create or bring into existence
	SYNTHESIS How you are expected to utilize the information gathered to reach an optimum conclusion by a process of reasoning	Discuss	Examine in detail by argument
		Interpret	Translate into intelligible or familiar terms
		Decide	To solve or conclude
	EVALUATION How you are expected to use your learning to evaluate, make decisions or recommendations	Advise	Counsel, inform or notify
		Evaluate	Appraise or asses the value of
		Recommend	Propose a course of action

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) Balance Sheet (extract) of Q Ltd. as on 31st March 2015.

Liabilities	₹ in Crores	Assets	₹ in Crores
Equity Shares	**20.80**	**Fixed Assets**	**105.60**
Long-term Liabilities	**104.00**	**Current Assets**	**57.60**
Current Liabilities	**78.40**	**Profit & Loss A/c**	**40.00**
	203.20		**203.20**

Additional Information:

- **Depreciation written off ₹ 8 crores.**
- **Preliminary Expenses written off ₹ 1.60 crores.**
- **Net Loss ₹ 25.60 crores.**

Ascertain the stage of sickness. **[10]**

Answer:

The NCAER Study on Corporate Distress Prediction prescribed the following three parameters for predicting the stage of Corporate Sickness:

(i) Cash profit position (a profitability measure)
(ii) Net working capital position (a liquidity measure)
(iii) Net worth position (a solvency measure)

In the given case, we need to judge the above-mentioned parameters to ascertain the stage of sickness of the company.

(i) Cash Profit = Net Profit + (Non-cash expenses/losses debited to profit & loss A/c) – (Non-cash incomes/Gains credited to Profit & Loss A/c)
Here, Cash Profit = Net Profit + Depreciation Written Off + Preliminary Expenses Written Off
= ₹ [(25.60) + 8 + 1.60] = (₹ 16 crores)

(ii) Net Working Capital = Current Assets – Current Liabilities
= ₹ [57.60 – 78.40] = (₹ 20.80 crores)

(iii) Net Worth = Share Capital + Reserves & Surplus – Miscellaneous Expenditure – Profit & Loss A/c (Dr.)
Here, Net Worth = Equity Share Capital – Profit & Loss A/c (Dr.)
= ₹ [20.80 – 40.00] = (₹ 19.20 crores)

1. (b) On 1st September 2014, BLT held 60% of the ordinary share capital of its only subsidiary CMU. 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 2015, exactly halfway through the financial year, BLT bought a further 20% of the ordinary share capital of CMU. In the year ended 31st August 2015 BLT's profits for the period were ₹ 98,970 and CMU's were ₹ 30,000. BLT paid a dividend of ₹ 40,000 on 1st July 2015. 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 BLT group for the year ended 31st August 2015. [10]

Answer:

BLT Group: Statement of changes in equity for the year ended 31st August 2015

	Attributable to equity shareholders of parent (₹)	Minority Interest (₹)	Total (₹)
Brought forward	4,49,600	1,27,000	5,76,600
Profit for the period (W1)	1,19,970	9,000	1,28,970
Transfer in respect of shares purchased by BLT (W2)	66,500	(66,500)	---
Dividend	(40,000)	---	(40,000)
Carried forward	5,96,070	69,500	6,65,570

(W1) Profit shares

Minority share of profit

₹ 30,000 × 6/12 × 40% = ₹ 6,000

₹ 30,000 × 6/12 × 20% = ₹ 3,000

₹ 9,000

Group share

₹ 98,970 + (₹ 30,000 – ₹ 9,000) = ₹ 1,19,970

(W2) 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.

Note: It is assumed that BLT purchased the further 20% of share capital of CMU at the proportionate value of share capital and profit of CMU.

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

2. (a) Following figures have been extracted from the records of Debya Ltd.:

Year	2013-14 (₹)	2014-15 (₹)
Sales	**5,00,000**	**6,32,500**
Cost of Goods Sold:		
Materials	**2,50,000**	**3,30,000**
Labour	**1,50,000**	**1,65,000**
Variable Overheads	**30,000**	**35,200**
Fixed Expenses	**50,000**	**60,000**
Net Profit	**20,000**	**42,300**

It is learnt that sales volume for the year 2014-15 has gone up by 10% over the year 2013-14. Moreover, cost of materials, labour and overhead have gone up by 10% each. Account for changes in net profit in the year 2014-15. [15]

Answer:

Let the number of units sold in 2013-14 be 100.
Then, the number of units sold in 2014-15 = 100 + 10% of 100 = 110.

		2013-14	2014-15	Changes
(i)	Sales (₹)	5,00,000	6,32,500	(+) 1,32,500
(ii)	Materials Cost (₹)	2,50,000	3,30,000	(+) 80,000
(iii)	Labour Cost (₹)	1,50,000	1,65,000	(+) 15,000
(iv)	Variable Overhead (₹)	30,000	35,200	(+) 5,200
(v)	(Gross Profit (₹) [a – b – c – d]	70,000	1,02,300	(+) 32,300
(vi)	Fixed Expenses (₹)	50,000	60,000	(+) 10,000
	Net Profit (₹ [e – f]	20,000	42,300	(+) 22,300
(vii)	Units Sold	100	110	(+) 10
(viii)	Selling Price per unit (₹) [a ÷ g]	5,000	5,750	(+) 750
(ix)	Material Cost per Unit (₹) [b ÷ g]	2,500	3,000	(+) 500
(x)	Labour Cost per unit (₹) [c ÷ g]	1,500	1,500	0
(xi)	Variable Overhead Cost per Unit (₹)[d ÷ g]	300	320	(+) 20

Statement showing account for changes in profit

Particulars		₹	₹
Changes in profit due to changes in sales:			
1.	Increase in profit due to increase in quantity [Change in quantity × Base year's unit selling price = (110 – 100) Units × ₹ 5,000]		50,000
2.	Increase in profit due to increase in unit selling price [Change in unit selling price × Base year's quantity = (₹ 5,750 – ₹ 5,000) × 100 units]		75,000
3.	Increase in profit due to change in price and quantity [Changes in unit selling price × Change in quantity = (₹ 5,750 – ₹ 5,000) × (110 – 100 units)]		7,500
			1,32,500
Changes in profit due to changes in material cost:			
1.	Decrease in profit due to increase in quantity [Change in quantity × Base year's unit cost price = (110 – 100) units × ₹ 2,500]	(25,000)	
2.	Decrease in profit due to increase in unit cost price [Change in unit cost price × Base year's quantity = (₹ 3,000 – ₹ 2,500) × 100 units]	(50,000)	
3.	Decrease in profit due to change in price and quantity [Change in unit cost price × Change in quantity = (₹ 3,000 – ₹ 2,500) × (110 – 100) units]	(5,000)	
			(80,000)

Changes in profit due to changes in labour cost:			
1.	Decrease in profit due to increase in quantity [Change in quantity × Base year's unit cost price = (110 – 100) units × ₹ 1,500]	(15,000)	
2.	Decrease in profit due to increase in unit cost price [Change in unit cost price × Base year's quantity = (₹ 1,500 – ₹ 1,500) × 100 units]	0	
3.	Decrease in profit due to change in price and quantity [Change in unit cost price × Change in quantity = (₹ 1,500 – ₹ 1,500) × (110 – 100) units]	0	
			(15,000)
Changes in profit due to changes in variable overhead cost:			
1.	Decrease in profit due to increase in quantity [Change in quantity × Base year's unit cost price = (110 – 100) units × ₹ 300]	(3,000)	
2.	Decrease in profit due to increase in unit cost price [Change in unit cost price × Base year's quantity = (₹ 320 – ₹ 300) × 100 units]	(2,000)	
3.	Decrease in profit due to change in price and quantity [Change in unit cost price × Change in quantity = (₹ 320 – ₹ 300) × (110 – 100) units]	(200)	
			(5,200)
	Net Increase in Gross Profit		32,300
Change in profit due to change in fixed expenses			(10,000)
	Net Increase in Net Profit		**22,300**

Note: Here, the base year is 2013-14.

2. (b) (i) The following are the Balance Sheet of Khan Ltd. as on 31.03.2014 and 31.03.2015:

Liabilities	**31.03.2014 (₹)**	**31.03.2015 (₹)**
Current Assets:		
Cash and Bank Balance	**23,600**	**2,000**
Debtors	**41,800**	**38,000**
Inventory	**32,000**	**26,000**
Other Current Assets	**6,400**	**2,600**
(A)	**1,03,800**	**68,600**
Fixed Assets:		
Land and Building	**54,000**	**34,000**
Plant and Machinery	**62,000**	**1,57,200**
Furniture	**5,800**	**9,600**
(B)	**1,21,800**	**2,00,800**
Long term investment (C)	**9,200**	**11,800**
Total Assets (A+B+C)	**2,34,800**	**2,81,200**

Current Liabilities (D)	**52,400**	**25,400**
Long-term debt (E)	**40,000**	**65,000**
Owners' Equity:		
Equity share capital	**80,000**	**1,20,000**
Reserve and surplus	**62,400**	**70,800**
(F)	**1,42,400**	**1,90,800**
Total Liabilities and capital (D+E+F)	**2,34,800**	**2,81,200**

Prepare comparative Balance sheet and study its financial position. [8+4]

Answer:

Comparative Balance Sheet of Khan Ltd. as on 31.03.2014 and 31.03.2015

	31.03.14 (₹)	31.03.15 (₹)	Amount of increase (+) or decrease (-) (₹)	Percentage increase (+) or decrease (-)
Current Assets:				
Cash and Bank Balance	23,600	2,000	(-) 21,600	(-) 91.5
Debtors	41,800	38,000	(-) 3,800	(-) 9.1
Inventory	32,000	26,000	(-) 6,000	(-) 18.8
Other Current Assets	6,400	2,600	(-) 3,800	(-) 59.4
(A)	1,03,800	68,600	(-) 35,200	(-) 33.9
Fixed Assets:				
Land and Building	54,000	34,000	(-) 20,000	(-) 37
Plant and Machinery	62,000	1,57,200	(+) 95,200	(+) 153.5
Furniture	5,800	9,600	(+) 3,800	(+) 65.5
(B)	1,21,800	2,00,800	(+)79,000	(+) 64.9
Long term investment (C)	9,200	11,800	(+) 2,600	(+) 28.3
Total assets (A + B + C)	2,34,800	2,81,200	(+) 46,400	(+) 19.8
Current Liabilities (D)	52,400	25,400	(-) 27,000	(-) 51.5
Long-term debt (E)	40,000	65,000	(+) 25,000	(+) 62.5
Owners' Equity:				
Equity share capital	80,000	1,20,000	(+) 40,000	(+) 50.0
Reserve and Surplus	62,400	70,800	(+) 8,400	(+) 13.5
(F)	1,42,400	1,90,800	(+) 48,400	(+) 34
Total liabilities and capital (D+E+F)	2,34,800	2,81,200	(+) 46,400	(+) 19.8

Comparative balance sheet shows the balance of different assets and liabilities of two different periods of same company and shows absolute increase/decrease of each item in 2014-15 over 2013-14 and also shows the percentage change. Interpretation of these changes is as follows:

(i) The current assets of Khan Ltd. have decreased by ₹ 35,200 in the year 2014-15 over 2013-14, whereas current liabilities have decrease by ₹ 27,000 only. But it has no adverse effect on short term liquidity or on current ratio because current assets have decreased by 33.9% and current liabilities have decreased by 51.5%.

(ii) Cash and Bank balance have decreased by 91.5%. It implies an adverse cash position of the company. The company may face problem in meeting its short-term obligations.

(iii) The long-term debt of the company has increased by 62.5%, whereas its owners' equity has improved by 34% only. It implies that the financial risk (in terms of dependency on outsiders and in terms of contractual obligation) associated with the company has increased significantly during the period under study.

(iv) There has been a substantial increase in the fixed assets by the company. The fixed assets have increased by ₹ 79,000 (64.9%). This is mainly due to significant increase in the plant and machinery of the company. The plant and machinery have increased by ₹ 95,200 (153.5%. it indicates a remarkable improvement in the production capacity of the company during the study period. Such cost of assets have financed by proprietors fund and long term loan raised. It indicates the long term stability of the business.

2. (b) (ii) Rambow Corporation purchased a 8% bond, at par, for ₹10,00,000 at the beginning of the year. Interest rates have recently increased and the market value of the bond declined by ₹30,000. Determine the bond's effect on Rambow's financial statements under each classification of securities. [3]

Answer:

If the bond is classified as a held-to-maturity security, the bond is reported on the balance sheet at ₹10,00,000. Interest income of ₹ 80,000 [₹10,00,000 × 8%] is reported in the income statement.

If the bond is classified as a trading security, the bond is reported on the balance sheet at ₹9,70,000. The ₹30,000 unrealized loss and ₹80,000 of interest income are both recognized in the income statement.

If the bond is classified as an available-for-sale security, the bond is reported on the balance sheet date at ₹9,70,000. Interest income of ₹80,000 is recognized in the income statement. The ₹30,000 unrealized loss is not recognized in the income statement. Rather, it is reported as a change in shareholders' equity.

2. (c) (i) Prinsley Ltd. has drawn up the following Sales Budget for July, 2015:

Product 'A'	**5,500 units at ₹ 90 each**
Product 'B'	**4,700 units at ₹ 80 each**
Product 'C'	**7,500 units at ₹ 120 each**

The actual sales for July, 2014 were:

Product 'A'	**5,650 units at ₹ 110 each**
Product 'B'	**4,800 units at ₹ 70 each**
Product 'C'	**6,000 units at ₹ 100 each**

The costs per unit of Product 'A', Product 'B' and Product 'C' were ₹ 70, ₹ 60 and ₹ 85 respectively. Analyse the variances to show the effects on turnover:

(I) Sales price variance;
(II) Sales mix variance;
(III) Sales quantity variance;
(IV) Total sales value variance. [2.5×4=10]

Answer:

Sales Variances (effects on turnover)

Toys	Budgeted			Actual		
	Quantity (Unit)	Rate (₹)	Amount (₹)	Quantity (Unit)	Rate (₹)	Amount (₹)
Product 'A'	5,500	90	4,95,000	5,650	110	6,21,500
Product 'B'	4,700	80	3,76,000	4,800	70	3,36,000
Product 'C'	7,500	120	9,00,000	6,000	100	6,00,000
Total	17,700		17,71,000	16,450		15,57,500

(I) Sales Price Variance = Actual Quantity × (Standard Rate – Actual Rate)

Product 'A'	= 5,650 units × ₹ (90 – 110)	= 5,650 units × ₹ 20	= ₹ 1,13,000 (F)
Product 'B'	= 4,800 units × ₹ (80 – 70)	= 4,800 units × ₹ 10	= ₹ 48,000 (A)
Product 'C'	= 6,000 units × ₹ (120 – 100)	= 6,000 units × ₹ 20	= ₹ 1,20,000 (A)
			= ₹ 55,000 (A)

(II) Sales Mix Variance = Standard Rate × (Revised Budgeted Quantity – Actual Quantity)

Product 'A'	= ₹ 90 × (5,112 - 5,650) units	= ₹ 48,420 (F)
Product 'B'	= ₹ 80 × (4,368 – 4,800) units	= ₹ 34,560 (F)
Product 'C'	= ₹ 120 × (6,970 – 6,000) units	= ₹ 1,16,400 (A)
		= ₹ 33,420 (A)

Note: Revised Budgeted Quantity = $\frac{\text{Actual Mix}}{\text{Budgeted Mix}}$ × Budgeted Quantity

Product 'A' (in units)	= $\frac{16,450}{17,700}$ × 5,500	= 5,112
Product 'B' (in units)	= $\frac{16,450}{17,700}$ × 4,700	= 4,368
Product 'C' (in units)	= $\frac{16,450}{17,700}$ × 7,500	= 6,970

(III) Sales Quantity Variance = Standard Rate × (Budgeted Quantity – Revised Budgeted Quantity) (or Revised Sales Volume Variance)

Product 'A'	= ₹ 90 × (5,500 - 5,112) units	= ₹ 34,920 (A)
Product 'B'	= ₹ 80 × (4,700 – 4,368) units	= ₹ 26,560 (A)
Product 'C'	= ₹ 120 × (7,500 – 6,970) units	= ₹ 63,600 (A)
		= ₹ 1,25,080 (A)

(IV) Total Sales Value Variance = Budgeted Sales – Actual Sales
= ₹ 17,71,000 – ₹ 15,57,500 = ₹ 2,13,500 (A)

Verification:
Total Sales Value Variance =Sales Price Variance + Sales Mix Variance +Sales Quantity Variance

₹ 2,13,500 (A) = ₹ 55,000 (A) + ₹ 33,420 (A) + ₹ 1,25,080 (A)

2. (c) (ii) The consolidated financial statements of P for the year ended 31st March 2015 showed the following balances:

Minority interest in the consolidated balance sheet at 31st March 2015 is ₹ 6 million [₹ 3.6 million at 31st March 2014].

Minority interest in the consolidated income statement for the year ended 31st March 2015 is ₹2 million.

During the year ended 31st March 2015, the group acquired a new 75% subsidiary whose net assets at the date of acquisition were ₹6.4 million. On 31st March 2015, the group revalued all its properties and the minority interest in the revaluation surplus was ₹1.5 million. There were no dividends payable to minority shareholders at the beginning or end of the year.

Required:

Calculate the amount of dividend paid to minority shareholders that will be shown in the consolidated cash flow statement of P for the year ended 31st March 2015. [5]

Answer:

The reconciliation of the movement on the minority interest account is as follows:

	₹ in million
Opening balance	3.60
Profit for the year	2.00
Acquisition (25% × ₹ 6.4 million)	1.60
Revaluation	1.50
Dividend (balance)	(2.70)
Closing balance	6.00

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

3. (a) Consider two firms that operate independently and have following characteristics.

(₹ in lakh)

Particulars	**M Ltd.**	**R Ltd.**
Reserves	**6,000**	**3,000**
Cost of goods sold	**3,500**	**1,800**
EBIT	**2,500**	**1,200**
Expected growth rate	**5%**	**7%**
Cost of capital	**8%**	**9%**

Both firms are in steady state, with capital spending offset by depreciation. Both firms have an effective tax rate of 40% and are financed only by equity.

Scenario I

Assume that combining of the two firms will create economics of scale that will reduce the cost of goods sold to 48% of reserves.

Scenario II

Assume that as consequence of the merger the combined firm is expected to increase its future growth to 7% while cost of goods sold is 60% and do not come down to 48%.

Scenario I & II are mutually exclusive.

You are required to

(I) Compute the values of both the firms as separate entities.

(II) Compute the value of both the firms together if there were absolutely no synergy at all from the merger.

(III) Compute the value of capital and the expected growth rate for the combined entity.

(IV) Compute the value of synergy in Scenario I and Scenario II. [2+1+2+5]

Answer:

(I) In the absence of any information regarding P/E or pay-out ratio, the following model may be used for valuation of the firm. i.e., $FCF(1+g)/K_e - g$ [FCF = EBIT (I – T)]

Value of M Ltd. = [1500 × 1.05]/[0.08 – 0.05]
= ₹ 25,500 million.

Value of R Ltd. = [720 × 1.07]/[0.09 – 0.07]
= ₹ 38,520 million.

(II) Value of both firms without synergy = 52,500 + 38,520 = ₹ 91,020 million.

(III) Weighted Average cost of capital

= 8% × 52500 / 91020 + 9% × 38520 / 91020 = 8.42%

Expected growth = 5% × 52500/91020 + 7% × 38520/91020 = 5.84%

(IV) Value of Synergy

Scenario I

	(₹ in million)
Reserves	9,000
Cost of goods sold (48% of reserves)	4,320
EBIT	4,680
PAT	2,808
Cost of Capital	8.42%
g	5.84%

Value = 2808 (1.0584)/[0.0842 – 0.0584] = ₹ 1,15,193 million

∴ Value of synergy = 1,15,193 – 91,020 = 24,173 million

Scenario II

	(₹ in million)
Reserves	9,000
Cost of goods sold (60% of reserves)	5,400
EBIT	3,600
PAT	2,160
Cost of Capital	8.42%
g	7.0%

Value = 2160(1.07)/[0.0842 – 0.07] = ₹ 1,62,760 million

∴ Synergy Value = 1,62,760 – 91,020 = ₹ 71,740 million

3. (b) X Ltd. purchased machinery from Y Ltd. on 30/09/2014. The price was 522.50 lakhs after charging 10% Vat and giving a trade discount of 5% on the quoted price. Transport charges were 0.25% on the quoted price and installation charges come to 1% on the quoted price.

A loan of ₹ 500 lakhs was taken from bank on which interest at 15% per annum was to be paid. Expenditure incurred on the trial run was: Material ₹ 50,000, wages ₹ 40,000 and overheads ₹ 30,000.

Machinery was ready for use on 01/12/2014. However it was actually put to use only on 01/05/2015. Find out the cost of the machine and suggest the accounting treatment for the expenses incurred in the interval between the dates 01/12/2014 to 01/05/2015. The entire loan amount remained unpaid on 01/05/2015. X Ltd. does not intend to utilize the input tax paid on capital good. [10]

Answer:

Calculation of Cost of Machine as per AS 10

	Particulars	₹ in lakhs
A	Quoted Price of machine	500.00
B	Trade discount @ 5% on ₹ 500	25.00
C	Price after discount [A – B]	475.00
D	VAT @ 10% on ₹ 475	47.50
E	Selling Price [C + D]	522.50
F	Transportation charges [0.25% of ₹ 500]	1.25
G	Installation charges [1% of ₹ 500]	5.00
H	Borrowing cost [₹ 500 lakhs × 15% × 2/12]	12.50
I	Expenditure on Trial Run	
	Material: 0.50	
	Wages: 0.40	
	Overheads: 0.30	1.20
J	Total Cost of the machinery to be capitalized [E+F+G+H+I]	542.45

As per AS–16, the capitalization of interest should cease when substantially all the activities necessary for intended use are completed. Therefore, interest for the period 01/12/2014 to 01/05/2015 should be expensed.

Working notes:

(i) Selling Price before VAT = ₹ 522.50 lakh × 100/110 = ₹ 475 lakhs

(ii) Quoted Price before Trade Discount = ₹ 475 lakh × 100/95 = ₹ 500 lakhs

(iii) As per AS – 16 interest should be capitalized only for the period when substantially all the activities necessary for intended use are completed. In present case machinery

was ready for use on 01/12/2014. Hence, in this case capitalization of interest should be done for only two months (i.e., from 30.09.2014 to 01.12.2014)
Interest for the two months = 500 lakhs × 15% × (2 months / 12 months) = 12.50 lakhs.

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

4. (a) (i) The following information is available for a concern. Compute EVA.

Debt Capital 12%	**₹ 2,000 Crores**	**Risk Free Rate**	**9%**
Equity Capital	**₹ 500 Crores**	**Beta Factor**	**1.05**
Reserves & Surplus	**₹ 7,500 Crores**	**Market Rate of Return**	**19%**
Capital Employed	**₹ 10,000 Crores**	**Equity (Market) Risk Premium**	**10%**
Operating Profit after Tax	**₹ 2,100 Crores**	**Tax Rate**	**30%**

[7]

Answer:

	Particulars	
1	Cost of Equity (K_e) = Risk Free Rate + (Beta × Market Risk Premium)	9+(1.05 × 10) = 19.50%
2	Cost of Debt (K_d) = Interest × (100% - Tax Rate)	12 × 70% = 8.40%
3	Debt – Equity Ratio (as given in the Question)	20% & 80%
4	WACC = [(K_d) × Debt% + (K_e) × Equity%]	17.28% (8.40 × 20%)+(19.50 × 80%)
5	Operating Profit before Tax (as given in the Question)	₹ 2,100 Crores
6	Capital Charge i.e., Fair Return to Providers of Capital = Capital Employed × WACC	₹ 10,000 Crores × 17.28% = ₹ 1,728 Crores
7	Economic Value Added (5 – 6)	₹ 372 Crores

4. (a) (ii) From the following details, compute according to Lev and Schwartz (1971) model the total value of human resources for employee groups - skilled and un-skilled.

	Particulars	Skilled	Un-skilled
A	**Annual average earning of an employee till age of retirement**	**₹1,00,000**	**₹60,000**
B	**Age of retirement**	**65 years**	**62 years**
C	**Discount rate**	**20%**	**20%**
D	**No. Of employees in the group**	**25**	**20**
E	**Average age**	**62 Years**	**60 Years**

It is assumed that employees will leave the organization only on retirement. [4+4]

Answer:

(I) Value of skilled employees:

$$= \frac{1,00,000}{(1+(0.20))^{(65-62)}} + \frac{1,00,000}{(1+(0.20))^{(65-63)}} + \frac{1,00,000}{(1+(0.20))^{(65-64)}}$$

$$= \frac{1,00,000}{(1.20)^3} + \frac{1,00,000}{(1.20)^2} + \frac{1,00,000}{(1.20)^1}$$

= 57870.37 + 69444.44 + 83333.33

Total value of this group = 57870.37+69444.44+83333.33 =210648.14×25 =₹ 52,66,203.50.

(II) Value of unskilled employees

$$= \frac{60,000}{(1+(0.20))^{(62-60)}} + \frac{60,000}{(1+(0.20))^{(62-61)}}$$

$$= \frac{60,000}{(1.20)^2} + \frac{60,000}{(1.20)^1}$$

= 41666.67 + 50000

Total of this group = 91666.67 × 20 = ₹ 18,33,000

Total value of human resources of both the groups = ₹ 52,66,203.50 + ₹ 18,33,333

= ₹ 70,99,536.50.

4. (b) (i) Describe H Model as modification to the existing mode. [5]

Answer:

This model is based on the assumptions that:

(A) Equity growth rate starts at a high initial rate (g_a) declines linearly over extra-ordinary growth period (which is assumed to last 2 H periods) to a stable growth rate (g_n)

(B) Dividend payout ratio is constant over time and is not affected by the shifting growth rates.

$P_0 = DPS_0 (1+g_n) +$	$DPS \times H (g_a - g_n)$
$\boxed{r - g_n}$	$\boxed{r - g_n}$
Stable growth	Extra ordinary growth

Where P_0 = Value of firm now per share

DPS_t = Dividend per share in year t

r = Required return to equity investor

g_a = Growth rate initially

g_n = Growth rate at the end of 2H years applied for ever after that.

Limitations:

(A) Growth rate is assumed to follow a structure laid out in the model deviations from the structure can cause problem.

(B) Assumption of payout ratio remaining constant in consistent.

4. (b) (ii) Navaratna Ltd. furnishes the following particulars about their investment in shares of Samay Ltd. for the year 2014-15

Balance of shares held on 1st April 2014	**₹ 2,62,000**	**(10,000 shares of ₹ 10 each)**
Purchased 2000 shares on 1st July 2014	**₹ 60,000**	
Sold 500 shares on 1st August 2014 @ ₹ 35 per share cum dividend	**₹ 17,500**	
Navaratna Ltd. declared final dividend for 2013-14 on 1st September 2014. Received 1:5 bonus shares on 1st February, 2015.	**20%**	

Brokerage for each transaction is 2%. Find out cost of shares held by Navaratna Ltd. as on 31st March 2015. [10]

Answer:

Statement of cost

Date	Particulars	Amount (₹)	Amount (₹)
1-4-14	Balance (10000 shares)		2,62,000
1-7-14	Purchased (2000 shares):		
	Cost (cum-div)	60,000	
	Add brokerage	1,200	
		61,200	
	Less: Dividend for 2013-14	4,000	
			57,200
1-8-14	Sold (500 shares cum div)		
	Sale proceeds	17,500	
	Less: brokerage 2%	350	
		17,150	
	Less: Dividend for 2013-14	1,000	
	Cost of sales (500 × 319200/12,000)		(13,300)
1-2-15	Bonus shares (1 : 5) i.e., (11,500 × 1/5)		Nil
	Cost of Investment		3,05,900

* Cost of sales is computed on average cost basis.

** Bonus shares are free and hence nothing is shown in amount column.

Treatment of dividend received:

Dividend received from Samay Ltd. during 2014-15 (11500 × ₹ 10) × 20%	23,000
Less: Dividend deducted from cost of investment	4,000
	19,000
Add: Dividend included in sales proceeds of 500 shares (received by the new buyer)	1,000
Dividend received to be shown in Profit & Loss A/c	20,000

Profit on sale of investment:

Sale proceeds of 500 shares (net of brokerage)	17,150
Less: Dividend for 2013-14 included above (to be considered as income)	1,000
Less: Cost of sales (on average cost basis)	13,300
Profit on sales	2,850

4. (c) Yogesh Ltd. showed the following performance over five years ended 31.03.2015 –

Year ending 31st March	Net Profit before Tax	Prior Period Adjustment	Remarks
2011	4,00,000	(1,00,000)	Relating to 2009 – 2010
2012	3,50,000	(2,50,000)	Relating equally to 2009 –2010 and 2010 -2011
2013	6,50,000	1,50,000	Relating to 2011 – 2012
2014	5,50,000	(1,75,000)	Relating to 2011 – 2012
2015	6,00,000	(1,00,000) 25,000	Relating to 2011 - 2012 Relating to 2013 - 2014

Net Profit before tax is after debiting or crediting the figures of Loss (within Brackets) or Gains mentioned under the columns for prior period adjustments.

The Net Worth of the business as per the Balance Sheet of 31.03.2010 is ₹ 6,00,000 backed by 10,000 fully paid Equity Shares of ₹ 10 each. Reserves and Surplus constitute the balance Net Worth.

You are asked to value Equity Shares on –

(I) Yield basis as on 31.03.2015 assuming:
- **40% Rate of Tax.**
- **Anticipated after tax yield of 20%.**
- **Differential weightage of 1 to 5 being give for the five years starting on 01.04.2011 for the actual profits of the respective years.**

(II) Net Assets Basis as per corrected balance Sheets for each of the six years ended 31.03.2015.

(III) Looking at the performance of the Company over the five year period, would you invest in the Company? [6+6+3]

Answer:

(I) Valuation of Shares on Yield Basis

Year ending 31st March	2011	2012	2013	2014	2015
Profit before Tax as given	4,00,000	3,50,000	6,50,000	5,50,000	6,00,000
(+/-) Prior Period Adj. Reversed					
Increase (Credit)	1,00,000	2,50,000	Nil	1,75,000	1,00,000
		1,50,000		25,000	
Decrease (Debit)	(1,25,000)	(1,00,000)	(1,50,000)	Nil	
		(1,75,000)			(25,000)
Revised Profits	3,75,000	4,75,000	5,00,000	7,50,000	6,75,000
Less: Tax Expense at 40%	(1,50,000)	(1,90,000)	(2,00,000)	(3,00,000)	(2,70,000)
Revised Profit After Tax	2,25,000	2,85,000	3,00,000	4,50,000	4,05,000
Weights	1	2	3	4	5
Product (Weight × Revised PAT)	2,25,000	5,70,000	9,00,000	18,00,000	20,25,000
Weighted Average = $\frac{2,25,000+5,70,000+9,00,000+18,00,000+20,25,000}{1+2+3+4+5} = \frac{₹55,20,000}{15}$					3,68,000

Number of Equity Shares	10,000 Sh.
Earnings Per Share = $\frac{₹3,68,000}{10,000 \text{ Shares}}$	₹ 36.80
Value Per Share = $\frac{\text{Earnings Per Share}}{\text{Market Expectations}} = \frac{₹36.80}{20\%}$	**₹ 184**

(II) Computation of Value per Share under Net Assets Basis

Year ending 31st March	Reserve & Surplus			Equity Capital	Net Assets	Value Per Share
	Opening Balance	Addition/ Adjustments	Closing Balance			
1	2	3	4 = 2+3	5	6 = 4+5	7 = 6 ÷ 10,000 Sh.
2010	5,00,000	(1,35,000)	3,65,000	1,00,000	4,65,000	46.50
2011	3,65,000	2,25,000	5,90,000	1,00,000	6,90,000	69.00
2012	5,90,000	2,85,000	8,75,000	1,00,000	9,75,000	97.50
2013	8,75,000	3,00,000	11,75,000	1,00,000	12,75,000	127.50
2014	11,75,000	4,50,000	16,25,000	1,00,000	17,25,000	172.50
2015	16,25,000	4,05,000	20,30,000	1,00,000	21,30,000	213.00

Working Notes: Computation of Revised Net Worth as at 31.03.2010

Particulars	₹	₹	₹
Equity Share Capital (10,000 Shares × ₹ 10 per Share)			1,00,000
Reserves before Adjustment (₹6,00,000 – ₹1,00,000) Balancing Figure		5,00,000	
Less: Expenditure relating to period prior to 31.03.2010 debited during:			
- 2010 – 2011	1,00,000		
- 2011 – 2012 (₹ 2,50,000 × 50%)	1,25,000		
Total Pretax Adjustments	2,25,000		
Less: Tax Benefit thereon at 40% (₹ 2,25,000 × 40%)	(90,000)	(1,35,000)	3,65,000
Revised Net Worth as at 31.03.2010			**4,65,000**

(III) Performance Appraisal

Year	Net Worth			Profits	Return on Net Worth
	Opening	Closing	Average		
2010-2011	4,65,000	6,90,000	5,77,500	2,25,000	38.96%
2011-2012	6,90,000	9,75,000	8,32,500	2,85,000	34.23%
2012-2013	9,75,000	12,75,000	11,25,000	3,00,000	26.67%
2013-2014	12,75,000	17,25,000	15,00,000	4,50,000	30.00%
2014-2015	17,25,000	21,30,000	19,27,500	4,05,000	21.01%

Conclusion:

- Though the value of shares has been increasing over the previous five years, the Return on Capital Employed has been steadily declining and has fallen from a healthy 38.96% to 21.01%.
- This may be because of the fact that Company has been retaining its profits without adequate reinvestment opportunities. Based on such a trend in performance, investment in the Company is not advisable.