

**Note: All questions are compulsory.**

**Question 1(8 Marks)**

<i>Projected Balance Sheet</i>				
	Year 1	Year 2	Year 3	Year 4
Fixed Assets (40% of Sales)	9,600	11,520	13,824	13,824
Current Assets (20% of Sales)	4,800	5,760	6,912	6,912
Total Assets	14,400	17,280	20,736	20,736
Equity	14,400	17,280	20,736	20,736

(2 marks)

**Projected Cash Flows:**

	Year 1	Year 2	Year 3	Year 4
Sales	24,000	28,800	34,560	34,560
PBT (10%) of sale	2,400	2,880	3,456	3,456
PAT (70%)	1,680	2,016	2,419.20	2,419.20
Depreciation	800	960	1,152	1,382
Addition to Fixed Assets	2400	2880	3456	1382
Increase in Current Assets	800	960	1,152	-
Operating cash flow	(720)	(864)	(1036.80)	(2419.20)

(2 marks)

**Projected Cash Flows:**

Present value of Projected Cash Flow:

<i>Cash Flows</i>	<i>PVF at 15%</i>	<i>PV</i>
-720	0.870	-626.40
-864	0.756	-653.18
-1,036.80	0.658	<u>-682.21</u>
		-1,961.79

(2 marks)

Residual Value	2419.20/0.15 = 16,128		
Present value of Residual value	=	16128/(1.15) <sup>3</sup>	
	=	16128/1.521 = 10603.55	
Total shareholders' value	=	10,603.55 – 1,961.79 =	8,641.76
Pre strategy value	=	1,400 / 0.15 = 9,333.33	
∴ Value of strategy	=	8,641.76 – 9,333.33 =	- 691.57

(2 marks)

Conclusion: The strategy is not financially viable

### Question 2 (8 marks)

(a) Swap Ratio (3 marks)

Share Capital	Abhiman Ltd. 200Lakh	Abhishek Ltd. 100 Lakh
Free Reserves	<u>800Lakh</u>	<u>500 Lakh</u>
Total	<u>1000Lakh</u>	<u>600Lakh</u>
No. of Shares	2 Lakh	10 Lakh
Book Value per share	Rs. 500	Rs. 60
Promoter's holding	50%	60%
Non promotor's holding	50%	40%
Free Float Market Cap .i.e. relating To Public ' holding	400 Lakh	128 Lakh
Hence Total market Cap	800Lakh	320 Lakh
No. of Shares	2 Lakh	10 Lakh
Market Price	Rs.400	Rs. 32
P/E Ratio	10	4
EPS	40	8
Profit (Rs. x 40 lakh) (Rs. 8 x 10 lakh)	Rs. 80 lakh -	- Rs. 80 lakh

Calculation of Swap Ratio

Book Value	1:0.12 i.e	0.12 x 25%	0.03
EPS	1:0.2	0.20 x 50%	0.10
Market Price	1:0.08	0.08 x 25%	<u>0.02</u>
		Total	<u>0.015</u>

Swap ratio is for every one share of Abhishek Ltd., to issue 0.15 shares of Abhiman Ltd. Hence total no. of shares to be issued.

10 Lakh x 0.15 = 1.50 lakh shares

(b) Book Value, EPS & Market Price (2 marks)

Total No. of Shares	2Lakh +1.5 Lakh =3.5 Lakh	
Total Capital	Rs. 200 lakh +Rs.150 lakh	=Rs.350 Lakh
Reserves	Rs. 800 lakh +Rs.450 lakh	=Rs.1,250 Lakh
Book Value	Rs. 350 lakh +Rs.1,250 lakh	=Rs.457.14 per share

3  
3.5 Lakh

$$\text{EPS} \frac{\text{Total Profit}}{\text{No. of Share}} = \frac{\text{Rs. 80Lakh}}{3.5 \text{ Lakh}} = \frac{\text{Rs. 160 Lakh}}{3.5} = \text{Rs. 45.71}$$

$$\text{Expected Market Price} = \text{EPS (Rs.45.71)} \times \text{P/E Ratio(10)} = \text{Rs. 457.10}$$

**(c) (3 marks)**

**(i) Promotor's holding**

Promoter's Revised	Abhiman 50% i.e.	1.00 Lakh shares
Holding	abhishek 60% i.e.	<u>0.90 Lakh shares</u>
	Total	<u>1.90 Lakh shares</u>

$$\text{Promoter's \%} = \frac{1.90}{3.50} \times 100 = 54.29\%$$

**(ii) Free Float Market Capitalisation**

$$\text{Free Float Market} = (3.5 \text{ Lakh} - 1.9 \text{ Lakh}) \times \text{Rs. 457.10}$$

$$\text{Capitalization} = \text{Rs. 731.36 Lakh}$$

**(iii) (i) & (ii)**

$$\text{Revised Capital} = \text{Rs. 350 Lakh} + \text{Rs. 175 Lakh} = \text{Rs. 525 Lakh}$$

$$\text{No. of shares before Split (F.V Rs. 100)} = 5.25 \text{ Lakh}$$

$$\text{No. of shares after Split (F.V Rs. 5)} = 5.25 \times 20 = 105 \text{ Lakh}$$

$$\text{EPS} = \frac{160 \text{ Lakh}}{105 \text{ Lakh}} = 1.523$$

$$\text{Book Value} = \frac{\text{Cap. Rs. 525 Lakh} + \text{Rs. 1075 Lakh}}{\text{No. of Sahres} = 105 \text{ Lakh}}$$

$$\text{No. of Sahres} = 105 \text{ Lakh}$$

$$= \text{Rs. 15.238 per share}$$

**Question 3(6 Marks) (3 marks for each project)**

		Project A		
Cash flow (in `)	Probability	Utility	Utility value	
-15,000	0.10	-100	-10	
- 10,000	0.20	-60	-12	
15,000	0.40	40	16	
10,000	0.20	30	6	
5,000	0.10	20	<u>2</u>	
			<u>2</u>	
		Project B		
Cash flow	Probability	Utility	Utility value	

(in `)			
-10,000	0.10	-60	-6
-4,000	0.15	-3	-0.45
15,000	0.40	40	16
5,000	0.25	20	5
10,000	0.10	30	<u>3</u>
			<u>17.55</u>

Project B should be selected as its expected utility is more

**Question 4 (6 marks)**

(in lakhs)

	Quote A	Quote B
<b>Calculation of Present Value (PV) of cash payments:</b>		
Initial lease rent (PV) (1 mark)	5.00	1.00
Less: PV of tax benefit on initial payment of lease rent(1 mark)		
` 5.00 lakh x 0.30 x 0.91	(1.365)	-
` 1.00 lakh x 0.30 x 0.91	-	(0.273)
PV of Annual lease rents(1 mark)		
` 21.06 lakh x 0.7 x 2.49	36.71	-
` 19.66 lakh x 0.7 x 3.17	-	43.63
<b>Total payments in PV</b>	<b>40.345</b>	<b>44.357</b>
Capital Recovery Factor (reciprocal of Annuity Factor) (1 mark)		
1/2.49	0.402	-
1/3.17	-	0.315
Equated Annual Payment or cash outflow (` lakhs)	<b>16.20</b>	<b>13.979</b>

**Conclusion:** Since Quote B implies lesser equated annual cash outflow, it is better. (2 marks)

**Question 5 (6 marks)**

i) **Current Market Price of Bond (2 marks)**

Time	CF	PVIF 8% PV (CF)	PV (CF)
1	14	0.926	12.964
2	14	0.857	11.998
3	14	0.794	11.116
4	14	0.735	10.290
5	114	0.681	<u>77.634</u>
		$\sum PV (CF) \text{ i.e. } P_0 =$	<u>124.002</u>

Say ` 124.00

ii) **Minimum Market Price of Equity Shares at which Bondholder should exercise conversion option:**

$$\frac{124.00}{20.00} = ` 6.20 \text{ (2 marks)}$$

iii) Duration of the Bond  
(2 marks)

Year	Cash flow	P.V. @ 8%		Proportion of bond value	Proportion of bond value x time (years)
1	14	0.926	12.964	0.105	0.105
2	14	0.857	11.998	0.097	0.194
3	14	0.794	11.116	0.089	0.267
4	14	0.735	10.290	0.083	0.332
5	114	0.681	<u>77.634</u>	<u>0.626</u>	<u>3.130</u>
			<u>124.002</u>	<u>1.000</u>	<u>4.028</u>

Question 6 (8 Marks)

Shares	No. of shares (lakhs) (1)	Market Price of Per Share (2)	(1)* (2) (lakhs)	% to total (w)	β (x)	wx
A Ltd.	3.00	500.00	1500.00	0.30	1.40	0.42
B Ltd.	4.00	750.00	3000.00	0.60	1.20	0.72
C Ltd.	2.00	250.00	<u>500.00</u>	<u>0.10</u>	1.60	<u>0.16</u>
			<u>5000.00</u>	1		<u>1.30</u>

(1) Portfolio beta 1.30 (2marks)

(2) Required Beta 0.91 (1mark)

Let the proportion of risk free securities for target beta  $0.91 = p$

$$0.91 = 0 \times p + 1.30 (1 - p)$$

$$p = 0.30 \text{ i.e. } 30\%$$

Shares to be disposed off to reduce beta  $5000 \times 30\%$  = 1,500 lakh

(3) Number of shares of each company to be disposed off (2 marks)

Shares	% to total (w)	Proportionate Amount (lakhs)	Market Price Per Share	No. of Shares (Lakh)
A Ltd.	0.30	450.00	500.00	0.90
B Ltd.	0.60	900.00	750.00	1.20
C Ltd.	<u>0.10</u>	150.00	250.00	0.60

(4) Number of Nifty Contract to be sold (1 mark)

$$(1.30 - 0.91) \times 5000 \text{ lakh} = 120 \text{ contracts}$$

$$8,125 \times 200$$

(5) 2% rises in Nifty is accompanied by 2% x 1.30 i.e. 2.6% rise for portfolio of shares

(2 marks)

	₹ Lakh
Current Value of Portfolio of Shares	5000
Value of Portfolio after rise	5130
Mark-to-Market Margin paid (8125 × 0.020 × ₹ 200 × 120)	39
Value of the portfolio after rise of Nifty	5091
% change in value of portfolio (5091 – 5000)/ 5000	1.82%
% rise in the value of Nifty	2%
Beta	0.91

**Question 7 (8 marks)**

The formula for the Dividend valuation Model is

$$P_0 = \frac{D_1}{K_e - g} \quad (1 \text{ mark})$$

$K_e$  = Cost of Capital

$g$  = Growth rate

$D_1$  = Dividend at the end of year 1

On the basis of the information given, the following projection can be made:

Year	EPS (Rs.) (1 mark)	DPS (Rs.) (1 mark)	PVF @15%	PV of DPS (Rs.) (1 mark)
2015	12.00 (9.60 x 125%)	4.80 (3.84 x 125%)	0.870	4.176
2016	15.00 (12.00 x 125%)	6.00 (4.80 x 125%)	0.756	4.536
2017	16.50 (15.00 x 110%)	8.25* (50% of Rs.16.50)	0.658	5.429
				<u>14.141</u>

\*Payout Ratio changed to 50%.

After 2017, the perpetuity value assuming 10% constant annual growth is:

$$D_1 = \text{Rs. } 8.25 \times 110\% = \text{Rs. } 9.075 \quad (1 \text{ mark})$$

Therefore  $P_0$  from the end of 2017

$$\frac{\text{Rs. } 9.075}{0.15 - 0.10} = \text{Rs. } 181.50 \quad (1 \text{ mark})$$

$$0.15 - 0.10$$

This must be discounted back to the present value, using the 3 year discount factor after 15%.

	Rs.
Present Value of $P_0$ (Rs. 181.50 × 0.658)	
<b>(1 mark)</b>	119.43
Add: PV of Dividends 2015 to 2017	<u>14.14</u>
Expected Market Price of Share <b>(1 mark)</b>	<u>133.57</u>

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