FINAL – November 2017

STRATEGIC FINANCIAL MANAGEMENT

Test Code –
Branch (MULTIPLE) (Date : 04.06.2017)

(50 Marks)

Note: All questions are compulsory.

Question 1(9 Marks)

Projected Balance Sheet				
	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	1152	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 Flows

Cash Flows	*PVF at 15%*	*PV*
-720	0.870	-626.40
-864	0.756	-653.18
-1,036.80	0.658	-682.21
		-1,961.79

(2 marks) -

Residual Value	2419.20/0.15 = 16,128		
Present value of Residual value	=	$16128/(1.15)^3$	
	=	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

(3 marks)

Conclusion: The strategy is not financially viable

Question 2 (6 marks)

The value of Cost of Equity with the help of CAPM

$Ke = Rf + \beta(Rm – Rf)$

With the given data the Cost of Equity using CAPM will be:

$Ke = 0.11 + 1.5(0.15 – 0.11)$

$Ke = 0.11 + 1.5(0.04) = 0.17$ or 17%

The value of share using the Growth Model:

$$P = \frac{D_0 (1 + g)}{e - g} k$$

$$P = \frac{20(1 + 0.09)}{0.17 - 0.09}$$

$P = \frac{21.80}{0.08}$ = ` 272.50 **(3 marks)**

However, if the decision of the Board of Directors is implemented, the beta factor is likely to increase to 1.75.

Therefore,

$K_e = 0.11 + 1.75(0.15 – 0.11)$

$K_e = 0.11 + 1.75(0.04) = 0.18$ or 18%

The value of share using the Growth Model:

$$P = \frac{D_0 (1 + g)}{e - g} k$$

$$P = \frac{20(1 + 0.09)}{0.18 - 0.09}$$

$P = \frac{21.80}{0.09}$ = ` 242.22**(3 marks)**

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	2
			2

	Project B		
Cash flow (in `)	**Probability**	**Utility**	**Utility value**
-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	3
			17.55

Project B should be selected as its expected utility is more

Question 4 (6 marks)

(in lakhs)

	Quote A	***Quote B***
Calculation of Present Value (PV) of cash payments:		
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
Total payments in PV	**40.345**	**44.357**
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)	**16.20**	**13.979**

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

Question 5 (5 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	77.634
		∑ PV (CF) i.e. P_0 =	124.002

Say ` 124.00

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

$\frac{124.00}{20.00}$ = ` 6.20 **(1 mark)**

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	77.634	0.626	3.130
			124.002	1.000	4.028

Question 6 (8 Marks)

Shares	No. of shares (lakhs) (1)	Market Price of Per Share (2)	(1)* x (2) (` lakhs)	% to total (w)	ß (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	500.00	0.10	1.60	0.16
			5000.00	1		1.30

(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

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

$p = 0.30$ i.e. 30%

Shares to be disposed off to reduce beta 5000 × 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.	0.10	150.00	250.00	0.60

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

$\frac{(1.30-0.91) \times 5000 \text{ lakh}}{8,125 \times 200} = 120$ contracts

(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 (10 marks)

(a) Calculation of NPV of XY Co.:

Project X **(2 marks)**		*Cash flow*	*PVF*	*PV*
Year				
1	(30 0.3) + (50 0.4) + (65 0.3)	48.5	0.909	44.09
2	(30 0.3) + (40 0.4) + (55 0.3)	41.5	0.826	34.28
3	(30 0.3) + (40 0.4) + (45 0.3)	38.5	0.751	28.91
				107.28
	NPV: (107.28 – 70.00) =			(+) 37.28

Project y (2 marks)

1-3	(40 0.2) + (45 0.5) + (50 0.3) NPV (113.15 – 80.00)	45.5	2.487	113.15 (+) 33.15

Hence Project x		
Year 1 $\sqrt{(30-48.5)^2\ 0.30+(50-48.5)^2\ 0.40+(65-48.5)^2\ 0.30}$	$\sqrt{185.25}$	13.61
Year 2 $\sqrt{(30-41.5)^2\ 0.30+(40-41.5)^2\ 0.40+(55-41.5)^2\ 0.30}$	$\sqrt{95.25}$	9.76
Year 3 $\sqrt{(30-38.5)^2\ 0.30+(40-38.5)^2\ 0.40+(45-38.5)^2\ 0.30}$	$\sqrt{35.25}$	5.94

Standard Deviation about the expected value

- Project X **(3 marks)**
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$$= \sqrt{\frac{185.25}{(1+0.10)^2} + \frac{95.25}{(1+0.10)^4} + \frac{35.25}{(1+0.10)^6}}$$

$$= \sqrt{\frac{185.25}{1.21} + \frac{95.25}{1.4641} + \frac{35.25}{1.7716}} = \sqrt{153.10 + 65.06 + 19.90}$$

$$= \sqrt{238.06} = 15.43$$

Project Y (For 1-3 years**)(3 marks)**

$\sqrt{(40-45.5)^2\ 0.20+(45-45.5)^2\ 0.50+(50-45.5)^2\ 0.30} = \sqrt{12.25} = 3.50$

Standard Deviation about the expected value

$$= \sqrt{\frac{12.25}{(1+0.10)^2} + \frac{12.25}{(1+0.10)^4} + \frac{12.25}{(1+0.10)^6}}$$

$$= \sqrt{\frac{12.25}{1.21} + \frac{12.25}{1.4641} + \frac{12.25}{1.7716}} = \sqrt{10.12 + 8.37 + 6.91}$$

$$= \sqrt{25.4} = 5.03$$

Analysis Project y is less risky as its Standard Deviation is less than Project X.

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