FINAL CA – NOV 2018

SUB: STRATEGIC FINANCIAL MANAGEMENT

Topics: Valuation of Securities, Management of Bonds, Dividend Policy, Merger & Acquisition, Portfolio Management, Capital Budgeting, Risk Analysis, Leasing.

Test Code – CF6
Branch (MULTIPLE) (Date :)

(50 Marks)

*Note: **All** questions are compulsory.*

Question 1 (8 marks)

1. *Calculation of NPV*

   = - ` 50,00,000 + [2,00,000 (` 30 – ` 16.50) – ` 10,00,000] PVIAF(12%,5)

   = - ` 50,00,000 + [2,00,000 (` 13.50) – ` 10,00,000] 3.605

   = - ` 50,00,000 + [` 27,00,000 – ` 10,00,000] 3.605

   =- ` 50,00,000 + ` 61,28,500 = ` 11,28,500

   Measurement of Sensitivity Analysis

   (a) Sales Price:-

   Let the sale price/Unit be S so that the project would break even with 0 NPV. ∴ ` 50,00,000
   = [2,00,000 (S – ` 16.50) – ` 10,00,000] PVIAF(12%,5)

   ` 50,00,000 = [2,00,000S – ` 33,00,000 – ` 10,00,000] 3.605

   ` 50,00,000 = [2,00,000S – ` 43,00,000] 3.605

   ` 13,86,963 = 2,00,000S – ` 43,00,000

   ` 56,86,963 = 2,00,000S

   S = ` 28.43 which represents a fall of (30 - 28.43)/30 or 0.0523 or 5.23%

   (B)Sales volume:-

   Let V be the sale volume so that the project would break even with 0 NPV. ∴ ` 50,00,000 =
   [V (` 30 – ` 16.50) – ` 10,00,000] PVIAF(12%,5)

   50,00,000 = [V (` 13.50) – ` 10,00,000] PVIAF(12%,5)

   50,00,000 = [` 13.50V – ` 10,00,000] 3.605

   13,86,963 = ` 13.50V – ` 10,00,000

   23,86,963 = ` 13.50V

   V = 1,76,812 which represents a fall of (2,00,000 - 1,76,812)/2,00,000 or 0.1159 or 11.59%

   (c) Variable Cost:-

   Let the variable cost be V so that the project would break even with 0 NPV. ∴ ` 50,00,000 =
   [2,00,000(` 30 – V) – ` 10,00,000] PVIAF(12%,5)

` 50,00,000 = [` 60,00,000 – ` 2,00,000 V – ` 10,00,000] 3.605

` 50,00,000 = [` 50,00,000 – 2,00,000 V] 3.605

` 13,86,963 = ` 50,00,000 – 2,00,000 V

` 36,13,037 = 2,00,000V

V = ` 18.07 which represents a fall of (18.07 – 16.50)/16.50 or 0.0951 or 9.51%

(d) Value of expected sales volume

(1,75,000 X 0.30) + (2,00,000 X 0.60) + (2,25,000 X 0.10) = ` 1,95,000 NPV = [195000 X ` 13.50 – ` 10,00,000] 3.605 – ` 50,00,000 = ` 8,85,163 Since, the expected NPV is positive project can be accepted.

Further NPV in worst and best cases will be as follows: Worst Case:

[1,75,000 X ` 13.50 – ` 10,00,000] 3.605 – ` 50,00,000 = - ` 88,188 Best Case:

[2,25,000 X ` 13.50 – ` 10,00,000] 3.605 – ` 50,00,000 = ` 23,45,188

Thus there are 30% chances that the rise will be a negative NPV and 70% chances of positive NPV. Since acceptable level of risk of Unnat Ltd. is 20% and there are 30% chances of negative NPV hence project should not be accepted.

Question 2 (8 marks)

Alternative I : Leasing decision

Year	Lease Rent	Tax on lease rent	Net Payment	P.V. Factor @ 9% (1-0.44)	Present values `
0	14,700	-----	14,700	1.000	14,700
1	14,700	6,468	8,232	0.952	7,837
2	14,700	6,468	8,232	0.906	7,458
3	14,700	6,468	8,232	0.863	7,104
4	14,700	6,468	8,232	0.821	6,758
5	14,700	6,468	8,232	0.782	6,437
6	14,700	6,468	8,232	0.745	6,133
7	---	6,468	(6,468)	0.709	(4,586)
	Present value of cash outflow				51,841

Alternative II : Buying decision

Year (1)	Loan Pay-ment (2) `	Inter-est (3) `	Balance (4) `	Repay-ment (5) = (2)-(3)	Maint-enance (6) `	Depre-ciation (7) `	Tax shield (8) (6)+(3)+(7)x 0.44 `	Out-flow (9)=(2) +(6)-(8) `	P.V. Factor @ 9% (1-0.44)	Pre-sent values `
1	9,935	4,500	50,000	5,435	3,700	7,000	6,688	6,947	0.952	6,614
2	9,935	4,011	44,565	5,924	3,700	7,000	6,473	7,162	0.906	6,489
3	9,935	3,478	38,641	6,457	3,700	7,000	6,238	7,397	0.863	6,384
4	9,935	2,897	32,184	7,038	3,700	7,000	5,983	7,652	0.821	6,282
5	9,935	2,263	25,146	7,672	3,700	7,000	5,704	7,931	0.782	6,202
6	9,935	1,573	17,474	8,362	3,700	7,000	5,400	8,235	0.745	6,135
7	9,935	823	9,112	9,112	3,700	7,000	5,070	8,565	0.709	6,073
7	Salvage	---	---	---	---	---	---	(1,000)	0.709	(709)
Present value of cash out flows										43,470

Decision : Since the present value of cashflow is lowest for Alternative II, it is suggested to purchase the machine.

Alternative I : Leasing decision

Year	Lease Rent	Tax on lease rent	Net Payment	P.V. Factor @ 9% (1-0.44)	Present values `
0	14,700	-----	14,700	1.000	14,700
1	14,700	6,468	8,232	0.952	7,837
2	14,700	6,468	8,232	0.906	7,458
3	14,700	6,468	8,232	0.863	7,104
4	14,700	6,468	8,232	0.821	6,758
5	14,700	6,468	8,232	0.782	6,437
6	14,700	6,468	8,232	0.745	6,133
7	---	6,468	(6,468)	0.709	(4,586)
	Present value of cash outflow				51,841

Question 3 (6 marks)

	`in lakhs
Net Profit	30
Less: Preference dividend	12
Earning for equity shareholders	18
Therefore earning per share	18/3 = ` 6.00

Cost of capital i.e. (k_e)

(Assumed)   16%

Let, the dividend pay-out ratio be X and so the share price will be:

$$P = D/ K_e + r(E-D) / (K_e)^2$$

Here D = 6x; E = ` 6; r = 0.20 and $K_e$ = 0.16 and P = ` 42

Hence 42 = 6x / 0.16 = 0.2 (6-6x) / 0.16 * 0.16
or ` 42 = 37.50X + 46.875 (1 –x)
= 9.375x = 4.875 x = 0.52

So, the required dividend payout ratio will be = 52%

Question 4 (8 marks)

(i)   Stock value or conversion value of bond
12 × 20 = Rs. 240

(ii)   Percentage of the downside risk
Rs. 265 - Rs. 235 / Rs. 235 = 0.1277 or 12.77%
This ratio gives the percentage price decline experienced by the bond if the stock becomes worthless.

(iii)   Conversion Premium
Market Price * Conversion Value / Conversion Value * 100
Rs. 265 - Rs. 240 / Rs. 240 * 100 = 10.42%

(iv)   Conversion Parity Price
Bond Price / No of Shares on Conversion = Rs. 265 / Rs. 20 = Rs. 13.25

This indicates that if the price of s hares rises to Rs. 13.25 from Rs. 12 the investor will neither gain nor lose on buying the bond and exercising it. Observe that Rs. 1.25 (Rs. 13.25 – Rs. 12.00) is 10.42% of Rs. 12, the Conversion Premium.

Question 5 (6 marks)

(a) First of all we shall compute Cost of Capital (Ke) of these companies using CAPM as follows:

Ke(TATA Chemicals) = 7.00% + (13% -7%)0.95

= 7.00% + 5.70% = 12.7%

Ke(L&T) = 7.00% + (13% -7%)1.42

=7.00%+8.52%=15.52%

P (TATA Chemicals) = 3.50(1.08) / 0.127 – 0.08 = 3.78 / 0.047 = ` 80.43

P (L & T) = 3.50(1.08) / 0.1552 – 0.08 = 3.78 / 0.0752 = ` 50.27

(b)   The valuation of share of L&T Ltd. is higher because if systematic risk is higher though both have same growth rate.

(c)   If the price of share of TATA Chemicals Ltd. is `74, the share is undervalued and it should be bought. If price of share of L&T Ltd. is `55, it is overvalued and should not be bought.

Question 6 (6 marks)

Market Risk Premium (A)

$6.50 = Rm - Rf / \beta_m = Rm − Rf/1$

Share	Beta	Risk Premium (Beta x A) %	Risk Free Return %	Return %	Return Rs.
Oxy Rin Ltd.	0.45	2.93	7	9.93	7,944
Boxed Ltd.	0.35	2.28	7	9.28	13,920
Square Ltd.	1.15	7.48	7	14.48	32,580
Ellipse Ltd.	1.85	12.03	7	19.03	85,635
Total Return					1,40,079

Total Investment Rs.9,05,000

(i) Portfolio Return = `1, 40, 079/ Rs. 9, 05, 000 *100 = 15.48%

(ii) Portfolio Beta

Portfolio Return = Risk Free Rate + Risk Premium x β = 15.48% 15.48%=7% + 6.50%β

$\beta = 1.30$

Alternative Approach

First we shall compute Portfolio Beta using the weighted average method as follows:

Beta p= 0.45 * 0.8/9.05 + 0.35 * 1.50/9.05 + 1.15 * 2.25/9.05 + 1.85 * 4.50/9.05

= 0.45x0.0884+ 0.35X0.1657+ 1.15X0.2486+ 1.85X0.4972 = 0.0398+ 0.058 + 0.2859 + 0.9198 = 1.3035

Accordingly,

(i)   Portfolio Return using CAPM formula will be as follows: $R_P = R_F +$

$Beta_P(R_M − R_F)$

=7%+1.3035x6.50%

=7%+8.47%=15.47%

(ii)   Portfolio Beta

As calculated above 1.3035

Question 7 (8 marks)

Calculation of Maximum Price to be paid for the acquisition of Nishana Ltd.

(` Crore)

Year	0	1	2	3	4	5
Operating cash flow	-	10.00	10.00	10.00	10.00	10.00
Gain on Sale of office premises	20.00	-	-	-	-	-
Synergy Benefits	-	2.00	2.00	2.00	2.00	2.00
Disposal of Nishana Ltd.	-	-	-	-	-	50.00
Net cash flow	20.00	12.00	12.00	12.00	12.00	62.00
PVF @ 20%	1	0.833	0.694	0.579	0.482	0.402
Present value	20.00	10.00	8.328	6.948	5.784	24.924

Total of Present value   75.984

Less: Market Value of Debentures   (15.000)

                                    60.984

Thus, the maximum price to be paid for acquisition of Nishana Ltd. ` 60.984 crore.

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