

PAPER – 2: STRATEGIC FINANCIAL MANAGEMENT

QUESTIONS

Sensitivity Analysis

1. Unnat Ltd. is considering investing ₹ 50,00,000 in a new machine. The expected life of machine is five years and has no scrap value. It is expected that 2,00,000 units will be produced and sold each year at a selling price of ₹ 30.00 per unit. It is expected that the variable costs to be ₹ 16.50 per unit and fixed costs to be ₹ 10,00,000 per year. The cost of capital of Unnat Ltd. is 12% and acceptable level of risk is 20%.

You are required to measure the sensitivity of the project's net present value to a change in the following project variables:

- (i) sale price;
- (ii) sales volume;
- (iii) variable cost;

and discuss the use of sensitivity analysis as a way of evaluating project risk.

On further investigation it is found that there is a significant chance that the expected sales volume of 2,00,000 units per year will not be achieved. The sales manager of Unnat Ltd. suggests that sales volumes could depend on expected economic states that could be assigned the following probabilities:

State of Economy	Annual Sales (in Units)	Prob.
Poor	1,75,000	0.30
Normal	2,00,000	0.60
Good	2,25,000	0.10

Calculate expected net present value of the project and give your decision whether company should accept the project or not.

Management Buy-out

2. Personal Computer Division of Distress Ltd., a computer hardware manufacturing company has started facing financial difficulties for the last 2 to 3 years. The management of the division headed by Mr. Smith is interested in a buyout on 1 April 2013. However, to make this buy-out successful there is an urgent need to attract substantial funds from venture capitalists.

Ven Cap, a European venture capitalist firm has shown its interest to finance the proposed buy-out. Distress Ltd. is interested to sell the division for ₹ 180 crore and Mr. Smith is of opinion that an additional amount of ₹ 85 crore shall be required to make this division viable. The expected financing pattern shall be as follows:

Source	Mode	Amount (₹ Crore)
Management	Equity Shares of ₹ 10 each	60.00
VenCap VC	Equity Shares of ₹ 10 each	22.50
	9% Debentures with attached warrant of ₹ 100 each	22.50
	8% Loan	160.00
Total		265.00

The warrants can be exercised any time after 4 years from now for 10 equity shares @ ₹ 120 per share.

The loan is repayable in one go at the end of 8th year. The debentures are repayable in equal annual installment consisting of both principal and interest amount over a period of 6 years.

Mr. Smith is of view that the proposed dividend shall not be kept more than 12.5% of distributable profit for the first 4 years. The forecasted EBIT after the proposed buyout is as follows:

Year	2013-14	2014-15	2015-16	2016-17
EBIT (₹ crore)	48	57	68	82

Applicable tax rate is 35% and it is expected that it shall remain unchanged at least for 5-6 years. In order to attract VenCap, Mr. Smith stated that book value of equity shall increase by 20% during above 4 years. Although, VenCap has shown their interest in investment but are doubtful about the projections of growth in the value as per projections of Mr. Smith. Further VenCap also demanded that warrants should be convertible in 18 shares instead of 10 as proposed by Mr. Smith.

You are required to determine whether or not the book value of equity is expected to grow by 20% per year. Further if you have been appointed by Mr. Smith as advisor then whether you would suggest to accept the demand of VenCap of 18 shares instead of 10 or not.

Bond Valuation

3. Mr. A is planning for making investment in bonds of one of the two companies X Ltd. and Y Ltd. The detail of these bonds is as follows:

Company	Face Value	Coupon Rate	Maturity Period
X Ltd.	₹ 10,000	6%	5 Years
Y Ltd.	₹ 10,000	4%	5 Years

The current market price of X Ltd.'s bond is ₹ 10,796.80 and both bonds have same Yield To Maturity (YTM). Since Mr. A considers duration of bonds as the basis of decision making, you are required to calculate the duration of each bond and you decision.

Interest Rate Collars

4. XYZ Inc. issues a £ 10 million floating rate loan on July 1, 2013 with resetting of coupon rate every 6 months equal to LIBOR + 50 bp. XYZ is interested in a collar strategy by selling a Floor and buying a Cap. XYZ buys the 3 years Cap and sell 3 years Floor as per the following details on July 1, 2013:

Notional Principal Amount	\$ 10 million
Reference Rate	6 months LIBOR
Strike Rate	4% for Floor and 7% for Cap
Premium	0*

*Since Premium paid for Cap = Premium received for Floor

Using the following data you are required to determine:

- Effective interest paid out at each reset date,
- The average overall effective rate of interest p.a.

Reset Date	LIBOR (%)
31-12-2013	6.00
30-06-2014	7.00
31-12-2014	5.00
30-06-2015	3.75
31-12-2015	3.25
30-06-2016	4.25

Forward Rate Agreement

5. Electraspace is consumer electronics wholesaler. The business of the firm is highly seasonal in nature. In 6 months of a year, firm has a huge cash deposits and especially near Christmas time and other 6 months firm cash crunch, leading to borrowing of money to cover up its exposures for running the business.

It is expected that firm shall borrow a sum of €50 million for the entire period of slack season in about 3 months.

A Bank has given the following quotations:

Spot 5.50% - 5.75%

3 × 6 FRA 5.59% - 5.82%

3 × 9 FRA 5.64% - 5.94%

3 month €50,000 future contract maturing in a period of 3 months is quoted at 94.15 (5.85%).

You are required to determine:

- (a) How a FRA, shall be useful if the actual interest rate after 6 months turnout to be:
 - (i) 4.5% (ii) 6.5%
- (b) How 3 months Future contract shall be useful for company if interest rate turns out as mentioned in part (a) above.

Swap

6. Derivative Bank entered into a plain vanilla swap through on OIS (Overnight Index Swap) on a principal of ₹ 10 crores and agreed to receive MIBOR overnight floating rate for a fixed payment on the principal. The swap was entered into on Monday, 2nd August, 2010 and was to commence on 3rd August, 2010 and run for a period of 7 days.

Respective MIBOR rates for Tuesday to Monday were:

7.75%, 8.15%, 8.12%, 7.95%, 7.98%, 8.15%.

If Derivative Bank received ₹ 317 net on settlement, calculate Fixed rate and interest under both legs.

Notes:

- (i) Sunday is Holiday.
- (ii) Work in rounded rupees and avoid decimal working.

Mutual Fund

7. A Mutual Fund having 300 units has shown its NAV of ₹ 8.75 and ₹ 9.45 at the beginning and at the end of the year respectively. The Mutual Fund has given two options:
 - (i) Pay ₹ 0.75 per unit as dividend and ₹ 0.60 per unit as a capital gain, or
 - (ii) These distributions are to be reinvested at an average NAV of ₹ 8.65 per unit.

What difference it would make in terms of return available and which option is preferable?

Security Valuation

8. ABC Limited's shares are currently selling at ₹ 13 per share. There are 10,00,000 shares outstanding. The firm is planning to raise ₹ 20 lakhs to Finance a new project.

Required:

What are the ex-right price of shares and the value of a right, if

- (i) The firm offers one right share for every two shares held.
- (ii) The firm offers one right share for every four shares held.

- (iii) How does the shareholders' wealth change from (i) to (ii)? How does right issue increases shareholders' wealth?
9. ABC Ltd. has ₹ 300 million, 12 per cent bonds outstanding with six years remaining to maturity. Since interest rates are falling, ABC Ltd. is contemplating of refunding these bonds with a ₹ 300 million issue of 6 year bonds carrying a coupon rate of 10 per cent. Issue cost of the new bond will be ₹ 6 million and the call premium is 4 per cent. ₹ 9 million being the unamortized portion of issue cost of old bonds can be written off no sooner the old bonds are called off. Marginal tax rate of ABC Ltd. is 30 per cent. You are required to analyse the bond refunding decision.

Valuation of Company

10. A valuation done of an established company by a well-known analyst has estimated a value of ₹ 500 lakhs, based on the expected free cash flow for next year of ₹ 20 lakhs and an expected growth rate of 5%.

While going through the valuation procedure, you found that the analyst has made the mistake of using the book values of debt and equity in his calculation. While you do not know the book value weights he used, you have been provided with the following information:

- (i) Company has a cost of equity of 12%,
- (ii) After tax cost of debt is 6%,
- (iii) The market value of equity is three times the book value of equity, while the market value of debt is equal to the book value of debt.

You are required to estimate the correct value of the company.

Merger and Acquisition

11. Following information is provided relating to the acquiring company Mani Ltd. and the target company Ratnam Ltd:

	Mani Ltd.	Ratnam Ltd.
Earnings after tax (₹ lakhs)	2,000	4,000
No. of shares outstanding (lakhs)	200	1,000
P/E ratio (No. of times)	10	5

Required:

- (i) What is the swap ratio based on current market prices?
- (ii) What is the EPS of Mani Ltd. after the acquisition?
- (iii) What is the expected market price per share of Mani Ltd. after the acquisition, assuming its P/E ratio is adversely affected by 10%?
- (iv) Determine the market value of the merged Co.

- (v) Calculate gain/loss for the shareholders of the two independent entities, due to the merger.

Portfolio Theory

12. Expected returns on two stocks for particular market returns are given in the following table:

Market Return	Aggressive	Defensive
7%	4%	9%
25%	40%	18%

You are required to calculate:

- The Betas of the two stocks.
 - Expected return of each stock, if the market return is equally likely to be 7% or 25%.
 - The Security Market Line (SML), if the risk free rate is 7.5% and market return is equally likely to be 7% or 25%.
 - The Alphas of the two stocks.
13. XYZ Ltd. has substantial cash flow and until the surplus funds are utilised to meet the future capital expenditure, likely to happen after several months, are invested in a portfolio of short-term equity investments, details for which are given below:

Investment	No. of shares	Beta	Market price per share ₹	Expected dividend yield
I	60,000	1.16	4.29	19.50%
II	80,000	2.28	2.92	24.00%
III	1,00,000	0.90	2.17	17.50%
IV	1,25,000	1.50	3.14	26.00%

The current market return is 19% and the risk free rate is 11%.

Required to:

- Calculate the risk of XYZ's short-term investment portfolio relative to that of the market;
- Whether XYZ should change the composition of its portfolio.

Money Market Instrument

14. M Ltd. has to make a payment on 30th January, 2010 of ₹ 80 lakhs. It has surplus cash today, i.e. 31st October, 2009; and has decided to invest sufficient cash in a bank's Certificate of Deposit scheme offering an yield of 8% p.a. on simple interest basis. What is the amount to be invested now?

Lease Financing

15. A Company is planning to acquire a machine costing ₹ 5,00,000. Effective life of the machine is 5 years. The Company is considering two options. One is to purchase the machine by lease and the other is to borrow ₹ 5,00,000 from its bankers at 10% interest p.a. The Principal amount of loan will be paid in 5 equal instalments to be paid annually. The machine will be sold at ₹ 50,000 at the end of 5th year. Following further informations are given:

- (a) Principal, interest, lease rentals are payable on the last day of each year.
- (b) The machine will be fully depreciated over its effective life.
- (c) Tax rate is 30% and after tax. Cost of Capital is 8%.

Compute the lease rentals payable which will make the firm indifferent to the loan option.

Dividend Decision

16. Mr. A is contemplating purchase of 1,000 equity shares of a Company. His expectation of return is 10% before tax by way of dividend with an annual growth of 5%. The Company's last dividend was ₹ 2 per share. Even as he is contemplating, Mr. A suddenly finds, due to a Budget announcement Dividends have been exempted from Tax in the hands of the recipients. But the imposition of Dividend Distribution Tax on the Company is likely to lead to a fall in dividend of 20 paise per share. A's marginal tax rate is 30%.

Required:

Calculate what should be Mr. A's estimates of the price per share before and after the Budget announcement?

Foreign Exchange Risk Management

17. XYZ Ltd. is an export oriented business house based in Mumbai. The Company invoices in customers' currency. Its receipt of US \$ 1,00,000 is due on September 1, 2009.

Market information as at June 1, 2009 is:

Exchange Rates		Currency Futures	
US \$/₹		US \$/₹	Contract size ₹ 4,72,000
Spot	0.02140	June	0.02126
1 Month Forward	0.02136	September	0.02118
3 Months Forward	0.02127		
	Initial Margin		Interest Rates in India
June	₹ 10,000		7.50%
September	₹ 15,000		8.00%

On September 1, 2009 the spot rate US \$/₹ is 0.02133 and currency future rate is 0.02134. Comment which of the following methods would be most advantageous for XYZ Ltd.

- (a) Using forward contract
- (b) Using currency futures
- (c) Not hedging currency risks.

It may be assumed that variation in margin would be settled on the maturity of the futures contract.

18. Following information relates to AKC Ltd. which manufactures some parts of an electronics device which are exported to USA, Japan and Europe on 90 days credit terms.

Cost and Sales information:

	Japan	USA	Europe
Variable cost per unit	₹ 225	₹ 395	₹ 510
Export sale price per unit	Yen 650	US\$10.23	Euro 11.99
Receipts from sale due in 90 days	Yen 78,00,000	US\$1,02,300	Euro 95,920

Foreign exchange rate information:

	Yen/₹	US\$/₹	Euro/₹
Spot market	2.417-2.437	0.0214-0.0217	0.0177-0.0180
3 months forward	2.397-2.427	0.0213-0.0216	0.0176-0.0178
3 months spot	2.423-2.459	0.02144-0.02156	0.0177-0.0179

Advice AKC Ltd. by calculating average contribution to sales ratio whether it should hedge its foreign currency risk or not.

Replacement Decision

19. A & Co. is contemplating whether to replace an existing machine or to spend money on overhauling it. A & Co. currently pays no taxes. The replacement machine costs ₹ 90,000 now and requires maintenance of ₹ 10,000 at the end of every year for eight years. At the end of eight years it would have a salvage value of ₹ 20,000 and would be sold. The existing machine requires increasing amounts of maintenance each year and its salvage value falls each year as follows:

Year	Maintenance (₹)	Salvage (₹)
Present	0	40,000
1	10,000	25,000

2	20,000	15,000
3	30,000	10,000
4	40,000	0

The opportunity cost of capital for A & Co. is 15%.

Required:

When should the company replace the machine?

(Notes: Present value of an annuity of ₹ 1 per period for 8 years at interest rate of 15% : 4.4873; present value of ₹ 1 to be received after 8 years at interest rate of 15% : 0.3269).

20. Write a short note on

- Leading and Lagging
- Social Cost Benefit Analysis
- Determinants of Dividend Policy
- Significance of an underlying in relation to Derivative Instruments
- Zero Coupon Bonds

SUGGESTED ANSWERS/HINTS

1. *Calculation of NPV*

$$\begin{aligned}
 &= - ₹ 50,00,000 + [2,00,000 (₹ 30 - ₹ 16.50) - ₹ 10,00,000] PVIAF(12\%, 5) \\
 &= - ₹ 50,00,000 + [2,00,000 (₹ 13.50) - ₹ 10,00,000] 3.605 \\
 &= - ₹ 50,00,000 + [₹ 27,00,000 - ₹ 10,00,000] 3.605 \\
 &= - ₹ 50,00,000 + ₹ 61,28,500 = ₹ 11,28,500
 \end{aligned}$$

Measurement of Sensitivity Analysis

(a) **Sales Price:-**

Let the sale price/Unit be S so that the project would break even with 0 NPV.

$$\therefore ₹ 50,00,000 = [2,00,000 (S - ₹ 16.50) - ₹ 10,00,000] PVIAF(12\%, 5)$$

$$₹ 50,00,000 = [2,00,000S - ₹ 33,00,000 - ₹ 10,00,000] 3.605$$

$$₹ 50,00,000 = [2,00,000S - ₹ 43,00,000] 3.605$$

$$₹ 13,86,963 = 2,00,000S - ₹ 43,00,000$$

$$₹ 56,86,963 = 2,00,000S$$

$$S = ₹ 28.43 \text{ which represents a fall of } (30 - 28.43)/30 \text{ or } 0.0523 \text{ or } 5.23\%$$

(b) Sales volume:-

Let V be the sale volume so that the project would break even with 0 NPV.

$$\therefore ₹ 50,00,000 = [V (₹ 30 - ₹ 16.50) - ₹ 10,00,000] PVIAF(12\%,5)$$

$$₹ 50,00,000 = [V (₹ 13.50) - ₹ 10,00,000] PVIAF(12\%,5)$$

$$₹ 50,00,000 = [₹ 13.50V - ₹ 10,00,000] 3.605$$

$$₹ 13,86,963 = ₹ 13.50V - ₹ 10,00,000$$

$$₹ 23,86,963 = ₹ 13.50V$$

$V = 1,76,812$ 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.

$$\therefore ₹ 50,00,000 = [2,00,000(₹ 30 - V) - ₹ 10,00,000] PVIAF(12\%,5)$$

$$₹ 50,00,000 = [₹ 60,00,000 - 2,00,000 V - ₹ 10,00,000] 3.605$$

$$₹ 50,00,000 = [₹ 50,00,000 - 2,00,000 V] 3.605$$

$$₹ 13,86,963 = ₹ 50,00,000 - 2,00,000 V$$

$$₹ 36,13,037 = 2,00,000V$$

$V = ₹ 18.07$ which represents a fall of $(18.07 - 16.50)/16.50$ or 0.0951 or 9.51%

(d) Value of expected sales volume

$$(1,75,000 \times 0.30) + (2,00,000 \times 0.60) + (2,25,000 \times 0.10) = ₹ 1,95,000$$

$$NPV = [1,95,000 \times ₹ 13.50 - ₹ 10,00,000] 3.605 - ₹ 50,00,000 = ₹ 8,85,163$$

Since, the expected NPV is positive project can be accepted.

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

Worst Case:

$$[1,75,000 \times ₹ 13.50 - ₹ 10,00,000] 3.605 - ₹ 50,00,000 = - ₹ 88,188$$

Best Case:

$$[2,25,000 \times ₹ 13.50 - ₹ 10,00,000] 3.605 - ₹ 50,00,000 = ₹ 23,45,188$$

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.

2. Working Notes

Calculation of Interest Payment on 9% Debentures

$$PVAF (9\%,6) = 4.486$$

$$\text{Annual Installment} = \frac{\text{₹ 22.50 crore}}{4.486} = \text{₹ 5.0156 crore}$$

Year	Balance Outstanding (₹ Crore)	Interest (₹ Crore)	Installment (₹ Crore)	Principal Repayment (₹ Crore)	Balance (₹ Crore)
1	22.5000	2.025	5.0156	2.9906	19.5094
2	19.5094	1.756	5.0156	3.2596	16.2498
3	16.2498	1.462	5.0156	3.5536	12.6962
4	12.6962	1.143	5.0156	3.8726	8.8236

Statement showing Value of Equity

Particulars	2013-14 (₹ Crore)	2014-15 (₹ Crore)	2015-16 (₹ Crore)	2016-17 (₹ Crore)
EBIT	48.0000	57.0000	68.0000	82.0000
Interest on 9% Debentures	2.0250	1.7560	1.4620	1.1430
Interest on 8% Loan	12.8000	12.8000	12.8000	12.8000
EBT	33.1750	42.4440	53.7380	68.0570
Tax* @35%	11.6110	14.8550	18.8080	23.8200
EAT	21.5640	27.5890	34.9300	44.2370
Dividend @12.5% of EAT*	2.6955	3.4490	4.3660	5.5300
	18.8685	24.1400	30.5640	38.7070
Balance b/f	Nil	18.8685	43.0085	73.5725
Balance c/f	18.8685	43.0085	73.5725	112.2795
Share Capital	82.5000	82.5000	82.5000	82.5000
	101.3685	125.5085	156.0725	194.7795

*Figures have been rounded off.

In the beginning of 2013-14 equity was ₹ 82.5000 crore which has been grown to ₹ 194.7795 over a period of 4 years. In such case the compounded growth rate shall be as follows:

$$(194.7795/82.5000)^{1/4} - 1 = 23.96\%$$

This growth rate is slightly higher than 20% as projected by Mr. Smith.

If the condition of VenCap for 18 shares is accepted the expected share holding after 4 years shall be as follows:

No. of shares held by Management	6.00 crore
No. of shares held by VenCap at the starting stage	2.25 crore
No. of shares held by VenCap after 4 years	4.05 crore
Total holding	6.30 crore

Thus, it is likely that Mr. Smith may not accept this condition of VenCap as this may result in losing their majority ownership and control to VenCap. Mr. Smith may accept their condition if management has further opportunity to increase their ownership through other forms.

3. To calculate duration of bond we need YTM, which shall be calculated as follows:

Let us try NPV @ 5%

$$= \frac{600}{(1.05)^1} + \frac{600}{(1.05)^2} + \frac{600}{(1.05)^3} + \frac{600}{(1.05)^4} + \frac{10,600}{(1.05)^5} - 10,796.80$$

$$= ₹ 571.43 + ₹ 544.22 + ₹ 518.30 + ₹ 493.62 + ₹ 8,305.38 - ₹ 10,796.80 = - ₹ 363.85$$

Let us now try NPV @ 4%

$$= \frac{600}{(1.04)^1} + \frac{600}{(1.04)^2} + \frac{600}{(1.04)^3} + \frac{600}{(1.04)^4} + \frac{10,600}{(1.04)^5} - 10,796.80$$

$$= ₹ 576.92 + ₹ 554.73 + ₹ 533.40 + ₹ 512.88 + ₹ 8,712.43 - ₹ 10,796.80 = ₹ 93.56$$

Let us now interpolation formula

$$= 4\% + \frac{93.56}{93.56 - (-363.85)} \times (5\% - 4\%)$$

$$= 4\% + \frac{93.56}{93.56 + 363.85}$$

$$= 4\% + \frac{93.56}{457.41} = 4.20\%$$

Duration of X Ltd.' s Bond

Year	Cash flow	P.V. @ 4.2%		Proportion of bond value	Proportion of bond value x time (years)
1	600	0.9597	575.82	0.0533	0.0533
2	600	0.9210	552.60	0.0512	0.1024
3	600	0.8839	530.34	0.0491	0.1473
4	600	0.8483	508.98	0.0472	0.1888
5	10600	0.8141	<u>8,629.46</u>	<u>0.7992</u>	<u>3.9960</u>
			<u>10,797.20</u>	<u>1.0000</u>	<u>4.4878</u>

Duration of the Bond is 4.4878 years say 4.9 years.

Duration of Y Ltd.'s Bond

Year	Cash flow	P.V. @ 4.2%		Proportion of bond value	Proportion of bond value x time (years)
1	400	0.9597	383.88	0.0387	0.0387
2	400	0.9210	368.40	0.0372	0.0744
3	400	0.8839	353.56	0.0357	0.1071
4	400	0.8483	339.32	0.0342	0.1368
5	10400	0.8141	<u>8,466.64</u>	<u>0.8542</u>	<u>4.2710</u>
			<u>9,911.80</u>	<u>1.0000</u>	<u>4.6280</u>

Duration of the Bond is 4.6280 years say 4.63 years.

Decision: Since the duration of Bond of Y Ltd. is lower hence it should be preferred. However difference between the duration of bond is not much higher and with higher coupon rate of X Ltd.'s bond, Mr. A should go for X Ltd.'s bond.

4. (a) The pay-off of each leg shall be computed as follows:

Cap Receipt

$$\text{Max } \{0, [\text{Notional principal} \times (\text{LIBOR on Reset date} - \text{Cap Strike Rate}) \times \frac{\text{Number of days in the settlement period}}{365}]\}$$

Floor Pay-off

$$\text{Max } \{0, [\text{Notional principal} \times (\text{Floor Strike Rate} - \text{LIBOR on Reset date}) \times \frac{\text{Number of days in the settlement period}}{365}]\}$$

Statement showing effective interest on each re-set date

Reset Date	LIBOR (%)	Days	Interest Payment (\$) LIBOR+0.50%	Cap Receipts (\$)	Floor Pay-off (\$)	Effective Interest
31-12-2013	6.00	184	3,27,671	0	0	3,27,671
30-06-2014	7.00	181	3,71,918	24,795	0	3,47,123
31-12-2014	5.00	184	2,77,260	0	0	2,77,260
30-06-2015	3.75	181	2,10,753	0	0	2,10,753
31-12-2015	3.25	184	1,89,041	0	12,603	2,01,644
30-06-2016	4.25	181	2,35,548	0	0	2,35,548
Total		1095				15,99,999

- (b) Average Annual Effective Interest Rate shall be computed as follows:

$$\frac{15,99,999}{1,00,00,000} \times \frac{365}{1095} \times 100 = 5.33\%$$

5. (a) By entering into an FRA, firm shall effectively lock in interest rate for a specified future in the given it is 6 months. Since, the period of 6 months is starting in 3 months, the firm shall opt for 3 × 9 FRA locking borrowing rate at 5.94%.

In the given scenarios, the net outcome shall be as follows:

	If the rate turns out to be 4.50%	If the rate turns out to be 6.50%
FRA Rate	5.94%	5.94%
Actual Interest Rate	4.50%	6.50%
Loss/ (Gain)	1.44%	(0.56%)
FRA Payment / (Receipts)	€50 m × 1.44 × ½ = €360,000	€50m × 0.56% × ½ = (€140,000)
Interest after 6 months on €50 Million at actual rates	= €50m × 4.5% × ½ = €1,125,000	= € 50m × 6.5% × ½ = €1,625,000
Net Out Flow	€ 1,485,000	€1,485,000

Thus, by entering into FRA, the firm has committed itself to a rate of 5.94% as follows:

$$\frac{€1,485,000}{€50,000,000} \times 100 \times \frac{12}{6} = 5.94\%$$

- (b) Since firm is a borrower it will like to off-set interest cost by profit on Future Contract. Accordingly, if interest rate rises it will gain hence it should sell interest rate futures.

$$\text{No. of Contracts} = \frac{\text{Amount of Borrowing}}{\text{Contract Size}} \times \frac{\text{Duration of Loan}}{3 \text{ months}}$$

$$= \frac{€50,000,000}{€50,000} \times \frac{6}{3} = 2000 \text{ Contracts}$$

The final outcome in the given two scenarios shall be as follows:

	If the interest rate turns out to be 4.5%	If the interest rate turns out to be 6.5%
<i>Future Course Action :</i>		
Sell to open	94.15	94.15
Buy to close	95.50 (100 - 4.5)	93.50 (100 - 6.5)
Loss/ (Gain)	1.35%	(0.65%)

Future Cash Payment (Receipt)	$\text{€}50,000 \times 2000 \times 1.35\% \times \frac{3}{12}$ = €337,500	$\text{€}50,000 \times 2000 \times 0.65\% \times \frac{3}{12}$ = (€162,500)
Interest for 6 months on €50 million at actual rates	$\text{€}50 \text{ million} \times 4.5\% \times \frac{1}{2}$ = €11,25,000	$\text{€}50 \text{ million} \times 6.5\% \times \frac{1}{2}$ = €16,25,000
	€1,462,500	€1,462,500

Thus, the firm locked itself in interest rate $\frac{\text{€}1,462,500}{\text{€}50,000,000} \times 100 \times \frac{12}{6} = 5.85\%$

6.

Day	Principal (₹)	MIBOR (%)	Interest (₹)
Tuesday	10,00,00,000	7.75	21,233
Wednesday	10,00,21,233	8.15	22,334
Thursday	10,00,43,567	8.12	22,256
Friday	10,00,65,823	7.95	21,795
Saturday & Sunday (*)	10,00,87,618	7.98	43,764
Monday	10,01,31,382	8.15	<u>22,358</u>
Total Interest @ Floating			1,53,740
Less: Net Received			<u>317</u>
Expected Interest @ fixed			<u>1,53,423</u>
Thus Fixed Rate of Interest			0.07999914
Approx.			8%

(*) i.e. interest for two days.

Note: Alternatively, answer can also be calculated on the basis of 360 days in a year.

7. (i) Returns for the year

(All changes on a Per -Unit Basis)

Change in Price: ₹ 9.45 – ₹ 8.75 = ₹ 0.70

Dividends received: ₹ 0.75

Capital gains distribution ₹ 0.60

Total reward ₹ 2.05

$$\text{Holding period reward: } \frac{\text{₹ } 2.05}{\text{₹ } 8.75} \times 100 = 23.43\%$$

- (ii) When all dividends and capital gains distributions are re-invested into additional units of the fund @ (₹ 8.65/unit)

Dividend + Capital Gains per unit

$$= \text{₹ } 0.75 + \text{₹ } 0.60 = \text{₹ } 1.35$$

$$\text{Total received from 300 units} = \text{₹ } 1.35 \times 300 = \text{₹ } 405/-$$

Additional Units Acquired

$$= \text{₹ } 405 / \text{₹ } 8.65 = 46.82 \text{ Units.}$$

$$\text{Total No. of Units} = 300 \text{ units} + 46.82 \text{ units} = 346.82 \text{ units.}$$

Value of 346.82 units held at the end of the year

$$= 346.82 \text{ units} \times \text{₹ } 9.45 = \text{₹ } 3277.45$$

Price Paid for 300 Units at the beginning of the year

$$= 300 \text{ units} \times \text{₹ } 8.75 = \text{₹ } 2,625.00$$

Holding Period Reward

$$\text{₹ } (3277.45 - 2625.00) = \text{₹ } 652.45$$

$$\text{Holding Period Reward} = \frac{\text{₹ } 652.45}{\text{₹ } 2625.00} \times 100 = 24.86\%$$

Conclusion: Since the holding period reward is more in terms of percentage in option-two i.e., reinvestment of distributions at an average NAV of ₹ 8.65 per unit, this option is preferable.

8. (i) Number of shares to be issued : 5,00,000

$$\text{Subscription price ₹ } 20,00,000 / 5,00,000 = \text{₹ } 4$$

$$\text{Ex-right Price} = \frac{\text{₹ } 1,30,00,000 + \text{₹ } 20,00,000}{15,00,000} = \text{₹ } 10$$

$$\text{Value of right} = \frac{\text{₹ } 10 - \text{₹ } 4}{2} = 3$$

- (ii) Subscription price ₹ 20,00,000 / 2,50,000 = ₹ 8

$$\text{Ex-right Price} = \frac{\text{₹ } 1,30,00,000 + \text{₹ } 20,00,000}{12,50,000} = \text{₹ } 12$$

$$\text{Value of right} = \frac{\text{₹ } 12 - \text{₹ } 8}{4} = \text{₹ } 1.$$

(iii) Calculation of effect of right issue on wealth of Shareholder's wealth who is holding, say 100 shares.

(a) When firm offers one share for two shares held.

Value of Shares after right issue (150 x ₹ 10)	₹ 1,500
Less: Amount paid to acquire right shares (50 x ₹ 4)	₹ 200
	<u>₹ 1,300</u>

(b) When firm offers one share for every four shares held.

Value of Shares after right issue (125 x ₹ 12)	₹ 1,500
Less: Amount paid to acquire right shares (25 x ₹ 8)	₹ 200
	<u>₹ 1,300</u>

(c) Wealth of Shareholders before Right Issue ₹ 1,300

Thus, there will be no change in the wealth of shareholders from (i) and (ii).

9. a. Calculation of initial outlay:- ₹ (million)

a. Face value	300
Add:-Call premium	<u>12</u>
Cost of calling old bonds	<u>312</u>
b. Gross proceed of new issue	300
Less: Issue costs	<u>6</u>
Net proceeds of new issue	<u>294</u>
c. Tax savings on call premium and unamortized cost 0.30 (12 + 9)	6.3

∴ Initial outlay = ₹ 312 million – ₹ 294 million – ₹ 6.3 million = ₹ 11.7 million

b. Calculation of net present value of refunding the bond:-

Saving in annual interest expenses	₹ (million)
[300 x (0.12 – 0.10)]	6.00
Less:- Tax saving on interest and amortization 0.30 x [6 + (9-6)/6]	<u>1.95</u>
Annual net cash saving	<u>4.05</u>
PVIFA (7%, 6 years)	4.766
∴ Present value of net annual cash saving	19.30
Less:- Initial outlay	<u>11.70</u>
Net present value of refunding the bond	<u>7.60</u>
Decision: The bonds should be refunded	

10. Cost of capital by applying Free Cash Flow to Firm (FCFF) Model is as follows:-

$$\text{Value of Firm} = V_0 = \frac{\text{FCFF}_1}{K_c - g_n}$$

Where –

FCFF₁ = Expected FCFF in the year 1

K_c = Cost of capital

g_n = Growth rate forever

Thus, ₹ 500 lakhs = ₹ 20 lakhs / (K_c - g)

Since g = 5%, then K_c = 9%

Now, let X be the weight of debt then with given cost of equity = 12% and cost of debt = 6%,

$$12\% (1 - X) + 6\% X = 9\%$$

$$X = 0.50$$

Hence, X = 0.50, so book value weight for debt taken was 50%

∴ Correct weight should be 75% of equity and 25% of debt.

∴ The Cost of capital should be = K_c = 12% (0.75) + 6% (0.25) = 10.50%

and correct firm's value = ₹ 20 lakhs / (0.105 - 0.05) = ₹ 363.64 lakhs.

11. (i) SWAP ratio based on current market prices:

EPS before acquisition:

Mani Ltd. : ₹ 2,000 lakhs / 200 lakhs: ₹ 10

Ratnam Ltd.: ₹ 4,000 lakhs / 1,000 lakhs: ₹ 4

Market price before acquisition:

Mani Ltd.: ₹ 10 × 10 ₹ 100

Ratnam Ltd.: ₹ 4 × 5 ₹ 20

SWAP ratio: 20/100 or 1/5 i.e. 0.20

- (ii) EPS after acquisition:

$$\frac{\text{₹}(2,000 + 4,000) \text{ Lakhs}}{(200 + 200) \text{ Lakhs}} = ₹ 15.00$$

- (iii) Market Price after acquisition:

EPS after acquisition : ₹ 15.00

P/E ratio after acquisition 10 × 0.9 9

Market price of share (₹ 15 X 9) ₹ 135.00

(iv) Market value of the merged Co.:

₹ 135 × 400 lakhs shares

₹ 540.00 Crores

or ₹ 54,000 Lakhs

(v) Gain/loss per share:

₹ Crore

	Mani Ltd.	Ratnam Ltd.
Total value before Acquisition	200	200
Value after acquisition	<u>270</u>	<u>270</u>
Gain (Total)	<u>70</u>	<u>70</u>
No. of shares (pre-merger) (lakhs)	200	1,000
Gain per share (₹)	35	7

12. (a) The Betas of two stocks:

Aggressive stock - $40\% - 4\%/25\% - 7\% = 2$

Defensive stock - $18\% - 9\%/25\% - 7\% = 0.50$

(b) Expected returns of the two stocks:-

Aggressive stock - $0.5 \times 4\% + 0.5 \times 40\% = 22\%$

Defensive stock - $0.5 \times 9\% + 0.5 \times 18\% = 13.5\%$

(c) Expected return of market portfolio = $0.5 \times 7\% + 0.5 \times 25\% = 16\%$

∴ Market risk prem. = $16\% - 7.5\% = 8.5\%$

∴ SML is, required return = $7.5\% + \beta_i 8.5\%$

(d) $R_s = \alpha + \beta R_m$

Where

α = Alpha

β = Beta

R_m = Market Return

For Aggressive Stock

$22\% = \alpha_A + 2(16\%)$

$\alpha_A = -10\%$

For Defensive Stock

$13.5\% = \alpha_D + 0.50(16\%)$

$\alpha_D = 5.5\%$

13. (i) Computation of Beta of Portfolio

Investment	No. of shares	Market Price	Market Value	Dividend Yield	Dividend	Composition	β	Weighted β
I	60,000	4.29	2,57,400	19.50%	50,193	0.2339	1.16	0.27
II	80,000	2.92	2,33,600	24.00%	56,064	0.2123	2.28	0.48
III	1,00,000	2.17	2,17,000	17.50%	37,975	0.1972	0.90	0.18
IV	1,25,000	3.14	3,92,500	26.00%	1,02,050	0.3566	1.50	0.53
			11,00,500		2,46,282	1.0000		1.46

$$\text{Return of the Port Folio} = \frac{2,46,282}{11,00,500} = 0.2238$$

$$\text{Beta of Port Folio} = 1.46$$

Market Risk implicit

$$0.2238 = 0.11 + \beta \times (0.19 - 0.11)$$

$$\text{Or, } 0.08 \beta + 0.11 = 0.2238$$

$$\beta = \frac{0.2238 - 0.11}{0.08} = 1.42$$

Market β implicit is 1.42 while the port folio β is 1.46. Thus the portfolio is marginally risky compared to the market.

- (ii) The decision regarding change of composition may be taken by comparing the dividend yield (given) and the expected return as per CAPM as follows:

Expected return	R_s	$=$	R_s as per CAPM is:
			$I_{RF} + (R_M - I_{RF}) \beta$
For investment I	R_s	$=$	$I_{RF} + (R_M - I_{RF}) \beta$
		$=$	$0.11 + (0.19 - 0.11) 1.16$
		$=$	20.28%
For investment II, R_s		$=$	$0.11 + (0.19 - 0.11) 2.28 = 29.24\%$
For investment III, R_s		$=$	$0.11 + (0.19 - 0.11) 0.90$
		$=$	18.20%
For investment IV, R_s		$=$	$0.11 + (0.19 - 0.11) 1.50$
		$=$	23%

Comparison of dividend yield with the expected return R_s shows that the dividend yields of investment I, II and III are less than the corresponding R_s . So, these

investments are over-priced and should be sold by the investor. However, in case of investment IV, the dividend yield is more than the corresponding R_s , so, XYZ Ltd. should increase its proportion.

14. Calculation of Investment Amount

Amount required for making payment on 30th January, 2010 = ₹ 80,00,000

Investment in Certificates of Deposit (CDs) on 31st October, 2009

Rate of interest = 8% p.a.

No. of days to maturity = 91 days

Interest on ₹ 1 of 91 days

$(₹ 1 \times 0.08 \times 91/365) = 0.0199452$

Amount to be received for Re. 1

$(₹ 1.00 + ₹ 0.0199452) = 1.0199452$

Calculation of amount to be invested now to get ₹ 80 lakhs after 91 days:

$$= \frac{₹ 80,00,000}{₹ 1.0199452} = ₹ 78,43,558.65$$

or, ₹ 78,43,600 or ₹ 78,44,000 approximately.

15. Borrowing option:

Annual Instalment = ₹ 5,00,000/- / 5 = ₹ 1,00,000/-

Annual depreciation = ₹ 5,00,000/- / 5 = ₹ 1,00,000/-

Computation of net cash outflow:

Year	Principal (₹)	Interest (₹)	Total (₹)	Tax Saving Depn. & Interest (₹)	Net cash Outflow (₹)	PV @ 8%	Total PV (₹)
1	1,00,000	50,000	1,50,000	45,000	1,05,000	0.926	97,230
2	1,00,000	40,000	1,40,000	42,000	98,000	0.857	83,986
3	1,00,000	30,000	1,30,000	39,000	91,000	0.794	72,254
4	1,00,000	20,000	1,20,000	36,000	84,000	0.735	61,740
5	1,00,000	10,000	1,10,000	33,000	77,000	0.681	52,437
							3,67,647
Less: Present value of Inflows at the end of 5 th year (₹ 50,000/- x 0.7) or ₹ 35,000 x 0.681 =							23,835
PV of Net Cash outflows							3,43,812

Calculation of lease rentals:

Therefore, Required Annual after tax outflow = $3,43,812/3.993$ = ₹ 86,104/-.

Therefore, Annual lease rental = $86,104/0.70$ = ₹ 1,23,006/-

16. The formula for determining value of a share based on expected dividend is:

$$P_0 = \frac{D_0 (1+g)}{(k-g)}$$

Where

P_0 = Price (or value) per share

D_0 = Dividend per share

g = Growth rate expected in dividend

k = Expected rate of return

Hence,

Price estimate before budget announcement: $P_0 = \frac{2 \times (1 + 0.05)}{(0.10 - 0.05)} = ₹ 42.00$

Price estimate after budget announcement: $P_0 = \frac{1.80 \times (1.05)}{(0.07 - 0.05)} = ₹ 94.50$

- 17.

Receipts using a forward contract = $1,00,000/0.02127$ = ₹ 47,01,457

Receipts using currency futures

The number of contracts needed is $(1,00,000/0.02118)/4,72,000 = 10$

Initial margin payable is $10 \times ₹ 15,000 = ₹ 1,50,000$

On September 1 Close at 0.02133

Receipts = $US\$1,00,000/0.02133$ = 46,88,233

Variation Margin = $[(0.02134 - 0.02118) \times 10 \times 472000/-]/0.02133$

OR $(0.00016 \times 10 \times 472000)/0.02133 = 755.2/0.02133$ 35,406

47,23,639

Less: Interest Cost – $1,50,000 \times 0.08 \times 3/12$ ₹ 3,000

Net Receipts ₹ 47,20,639

Receipts under different methods of hedging

Forward contract ₹ 47,01,457

Futures ₹ 47,20,639

No hedge

US\$ 1,00,000/0.02133

₹ 46,88,233

The most advantageous option would have been to hedge with futures.

18. If foreign exchange risk is hedged

				Total (₹)
Sum due	Yen 78,00,000	US\$1,02,300	Euro 95,920	
Unit input price	Yen 650	US\$10.23	Euro 11.99	
Unit sold	12000	10000	8000	
Variable cost per unit	₹ 225/-	395	510	
Variable cost	₹ 27,00,000	₹ 39,50,000	₹ 40,80,000	₹ 1,07,30,000
Three months forward rate for selling	2.427	0.0216	0.0178	
Rupee value of receipts	₹ 32,13,844	₹ 47,36,111	₹ 53,88,764	₹ 1,33,38,719
Contribution	₹ 5,13,844	₹ 7,86,111	₹ 13,08,764	₹ 26,08,719
Average contribution to sale ratio				19.56%

If foreign exchange risk is not hedged

Rupee value of receipt	₹ 31,72,021	₹ 47,44,898	₹ 53,58,659	₹ 1,32,75,578
Total contribution				₹ 25,45,578
Average contribution to sale ratio				19.17%

AKC Ltd. Is advised to hedge its foreign currency exchange risk.

19.

A & Co.

Equivalent cost of (EAC) of new machine

		₹
(i)	Cost of new machine now	90,000
	Add: PV of annual repairs @ ₹ 10,000 per annum for 8 years (₹ 10,000 × 4.4873)	<u>44,873</u>
		1,34,873
	Less: PV of salvage value at the end of 8 years (₹ 20,000 × 0.3269)	6,538
		<u>1,28,335</u>
	Equivalent annual cost (EAC) (₹ 1,28,335/4.4873)	28,600

PV of cost of replacing the old machine in each of 4 years with new machine

Scenario	Year	Cash Flow	PV @ 15%	PV
		(₹)		(₹)
Replace Immediately	0	(28,600)	1.00	(28,600)
		40,000	1.00	40,000
				<u>11,400</u>
Replace in one year	1	(28,600)	0.870	(24,882)
	1	(10,000)	0.870	(8,700)
	1	25,000	0.870	21,750
				<u>(11,832)</u>
Replace in two years	1	(10,000)	0.870	(8,700)
	2	(28,600)	0.756	(21,622)
	2	(20,000)	0.756	(15,120)
	2	15,000	0.756	11,340
				<u>(34,102)</u>
Replace in three years	1	(10,000)	0.870	(8,700)
	2	(20,000)	0.756	(15,120)
	3	(28,600)	0.658	(18,819)
	3	(30,000)	0.658	(19,740)
	3	10,000	0.658	6,580
				<u>(55,799)</u>
Replace in four years	1	(10,000)	0.870	(8,700)
	2	(20,000)	0.756	(15,120)
	3	(30,000)	0.658	(19,740)
	4	(28,600)	0.572	(16,359)
	4	(40,000)	0.572	(22,880)
				<u>(82,799)</u>

Advice: The company should replace the old machine immediately because the PV of cost of replacing the old machine with new machine is least.

20. (a) Leading means advancing a payment i.e. making a payment before it is due. Lagging involves postponing a payment i.e. delaying payment beyond its due date.

In forex market Leading and lagging are used for two purposes:-

- (1) Hedging foreign exchange risk: A company can lead payments required to be made in a currency that is likely to appreciate. For example, a company has to pay \$100000 after one month from today. The company apprehends the USD to appreciate. It can make the payment now. Leading involves a finance cost i.e. one month's interest cost of money used for purchasing \$100000.
- A company may lag the payment that it needs to make in a currency that it is likely to depreciate, provided the receiving party agrees for this proposition. The receiving party may demand interest for this delay and that would be the cost of lagging. Decision regarding leading and lagging should be made after considering (i) likely movement in exchange rate (ii) interest cost and (iii) discount (if any).
- (2) Shifting the liquidity by modifying the credit terms between inter-group entities: For example, A Holding Company sells goods to its 100% Subsidiary. Normal credit term is 90 days. Suppose cost of funds is 12% for Holding and 15% for Subsidiary. In this case the Holding may grant credit for longer period to Subsidiary to get the best advantage for the group as a whole. If cost of funds is 15% for Holding and 12% for Subsidiary, the Subsidiary may lead the payment for the best advantage of the group as a whole. The decision regarding leading and lagging should be taken on the basis of cost of funds to both paying entity and receiving entity. If paying and receiving entities have different home currencies, likely movements in exchange rate should also be considered.
- (b) It is increasingly realised that commercial evaluation of projects is not enough to justify commitment of funds to a project especially when the project belongs to public utility and irrespective of its financial viability it needs to be implemented in the interest of the society as a whole. Huge amount of funds are committed every year to various public projects of all types—industrial, commercial and those providing basic infrastructure facilities. Analysis of such projects has to be done with reference to the social costs and benefits since they cannot be expected to yield an adequate commercial rate of return on the funds employed at least during the short period. A social rate of return is more important. The actual costs or revenues do not necessarily reflect the monetary measurement of costs or benefits to the society. This is because the market price of goods and services are often grossly distorted due to various artificial restrictions and controls from authorities, hence a different yardstick has to be adopted for evaluating a particular project of social importance and its costs and benefits are valued at 'opportunity cost' or shadow prices to judge the real impact of their burden as costs to the society. Thus, social cost benefit analysis conducts a monetary assessment of the total cost and revenues or benefits of a project, paying particular attention to the social costs and benefits which do not normally feature in conventional costing.

United Nations Industrial Development Organisation (UNIDO) and Organisation of Economic Cooperation and Development (OECD) have done much work on Social

Cost Benefit analysis. A great deal of importance is attached to the social desirability of projects like employment generation potential, value addition, foreign exchange benefit, living standard improvement etc. UNIDO and OECD approaches need a serious consideration in the calculation of benefits and costs to the society. This technique has got more relevance in the developing countries where public capital needs precedence over private capital.

- (c) Many factors determine the dividend policy of a company. Some of the factors determining the dividend policy are:
- (i) **Dividend Payout ratio:** A certain share of earnings to be distributed as dividend has to be worked out. This involves the decision to pay out or to retain. The payment of dividends results in the reduction of cash and, therefore, depletion of assets. In order to maintain the desired level of assets as well as to finance the investment opportunities, the company has to decide upon the payout ratio. D/P ratio should be determined with two bold objectives – maximising the wealth of the firms' owners and providing sufficient funds to finance growth.
 - (ii) **Stability of Dividends:** Generally investors favour a stable dividend policy. The policy should be consistent and there should be a certain minimum dividend that should be paid regularly. The liability can take any form, namely, constant dividend per share; stable D/P ratio and constant dividend per share plus something extra. Because this entails – the investor's desire for current income, it contains the information content about the profitability or efficient working of the company; creating interest for institutional investor's etc.
 - (iii) **Legal, Contractual and Internal Constraints and Restriction:** Legal and Contractual requirements have to be followed. All requirements of Companies Act, SEBI guidelines, capital impairment guidelines, net profit and insolvency etc., have to be kept in mind while declaring dividend. For example, insolvent firm is prohibited from paying dividends; before paying dividend accumulated losses have to be set off, however, the dividends can be paid out of current or previous years' profit. Also there may be some contractual requirements which are to be honoured. Maintenance of certain debt equity ratio may be such requirements. In addition, there may be certain internal constraints which are unique to the firm concerned. There may be growth prospects, financial requirements, availability of funds, earning stability and control etc.
 - (iv) **Owner's Considerations:** This may include the tax status of shareholders, their opportunities for investment dilution of ownership etc.
 - (v) **Capital Market Conditions and Inflation:** Capital market conditions and rate of inflation also play a dominant role in determining the dividend policy. The extent to which a firm has access to capital market, also affects the dividend policy. A firm having easy access to capital market will follow a liberal dividend policy as compared to the firm having limited access. Sometime dividends are

paid to keep the firms 'eligible' for certain things in the capital market. In inflation, rising prices eat into the value of money of investors which they are receiving as dividends. Good companies will try to compensate for rate of inflation by paying higher dividends. Replacement decision of the companies also affects the dividend policy.

- (d) The underlying may be a share, a commodity or any other asset which has a marketable value which is subject to market risks. The importance of underlying in derivative instruments is as follows:
- All derivative instruments are dependent on an underlying to have value.
 - The change in value in a forward contract is broadly equal to the change in value in the underlying.
 - In the absence of a valuable underlying asset the derivative instrument will have no value.
 - On maturity, the position of profit/loss is determined by the price of underlying instruments. If the price of the underlying is higher than the contract price the buyer makes a profit. If the price is lower, the buyer suffers a loss.
- (e) As name indicates these bonds do not pay interest during the life of the bonds. Instead, zero coupon bonds are issued at discounted price to their face value, which is the amount a bond will be worth when it matures or comes due. When a zero coupon bond matures, the investor will receive one lump sum (face value) equal to the initial investment plus interest that has been accrued on the investment made. The maturity dates on zero coupon bonds are usually long term. These maturity dates allow an investor for a long range planning. Zero coupon bonds issued by banks, government and private sector companies. However, bonds issued by corporate sector carry a potentially higher degree of risk, depending on the financial strength of the issuer and longer maturity period, but they also provide an opportunity to achieve a higher return.