PAPER – 2: STRATEGIC FINANCIAL MANAGEMENT

QUESTIONS

Security Valuation

1. Based on the credit rating of bonds, Mr. Z has decided to apply the following discount rates for valuing bonds:

Credit Rating	Discount Rate
AAA	364 day T bill rate + 3% spread
AA	AAA + 2% spread
A	AAA + 3% spread

    He is considering to invest in AA rated, ₹ 1,000 face value bond currently selling at ₹ 1,025.86. The bond has five years to maturity and the coupon rate on the bond is 15% p.a. payable annually. The next interest payment is due one year from today and the bond is redeemable at par. (Assume the 364 day T-bill rate to be 9%).

    You are required to calculate the intrinsic value of the bond for Mr. Z. Should he invests in the bond? Also calculate the current yield and the Yield to Maturity (YTM) of the bond.

2. Seawell Corporation, a manufacturer of do-it-yourself hardware and housewares, reported earnings per share of € 2.10 in 2013, on which it paid dividends per share of €0.69. Earnings are expected to grow 15% a year from 2004 to 2008, during this period the dividend payout ratio is expected to remain unchanged. After 2018, the earnings growth rate is expected to drop to a stable rate of 6%, and the payout ratio is expected to increase to 65% of earnings. The firm has a beta of 1.40 currently, and is expected to have a beta of 1.10 after 2018. The market risk premium is 5.5%. The Treasury bond rate is 6.25%.

    (a) What is the expected price of the stock at the end of 2018?

    (b) What is the value of the stock, using the two-stage dividend discount model?

Portfolio Management

3. An investor has decided to invest to invest ₹ 1,00,000 in the shares of two companies, namely, ABC and XYZ. The projections of returns from the shares of the two companies along with their probabilities are as follows:

Probability	ABC(%)	XYZ(%)
20	12	16
25	14	10
25	-7	28
30	28	-2

You are required to

(i)   Comment on return and risk of investment in individual shares.

(ii)   Compare the risk and return of these two shares with a Portfolio of these shares in equal proportions.

(iii) Find out the proportion of each of the above shares to formulate a minimum risk portfolio.

4.   X Co., Ltd., invested on 1.4.2009 in certain equity shares as below:

Name of Co.	No. of shares	Cost (₹)
M Ltd.	1,000 (₹ 100 each)	2,00,000
N Ltd.	500 (₹ 10 each)	1,50,000

In September, 2009, 10% dividend was paid out by M Ltd. and in October, 2009, 30% dividend paid out by N Ltd. On 31.3.2010 market quotations showed a value of ₹ 220 and ₹ 290 per share for M Ltd. and N Ltd. respectively.

On 1.4.2010, investment advisors indicate (a) that the dividends from M Ltd. and N Ltd. for the year ending 31.3.2011 are likely to be 20% and 35%, respectively and (b) that the probabilities of market quotations on 31.3.2011 are as below:

Probability factor	Price/share of M Ltd.	Price/share of N Ltd.
0.2	220	290
0.5	250	310
0.3	280	330

You are required to:

(i)   Calculate the average return from the portfolio for the year ended 31.3.2010;

(ii)   Calculate the expected average return from the portfolio for the year 2010-11; and

(iii) Advise X Co. Ltd., of the comparative risk in the two investments by calculating the standard deviation in each case.

Mutual Fund

5.   There are two Mutual Funds viz. D Mutual Fund Ltd. and K Mutual Fund Ltd. Each having close ended equity schemes.

NAV as on 31-12-2014 of equity schemes of D Mutual Fund Ltd. is ₹ 70.71 (consisting 99% equity and remaining cash balance) and that of K Mutual Fund Ltd. is 62.50 (consisting 96% equity and balance in cash).

Following is the other information:

Particular	Equity Schemes	
	D Mutual Fund Ltd.	K Mutual Fund Ltd.
Sharpe Ratio	2	3.3
Treynor Ratio	15	15
Standard deviation	11.25	5

There is no change in portfolios during the next month and annual average cost is ₹ 3 per unit for the schemes of both the Mutual Funds.

If Share Market goes down by 5% within a month, calculate expected NAV after a month for the schemes of both the Mutual Funds.

For calculation, consider 12 months in a year and ignore number of days for particular month.

Derivatives

6. The market received rumour about ABC corporation's tie-up with a multinational company. This has induced the market price to move up. If the rumour is false, the ABC corporation stock price will probably fall dramatically. To protect from this an investor has bought the call and put options.

   He purchased one 3 months call with a striking price of ₹42 for ₹2 premium, and paid Re.1 per share premium for a 3 months put with a striking price of ₹40.

   (i) Determine the Investor's position if the tie up offer bids the price of ABC Corporation's stock up to ₹43 in 3 months.

   (ii) Determine the Investor's ending position, if the tie up programme fails and the price of the stocks falls to ₹ 36 in 3 months.

7. Indira has a fund of ₹ 3 lacs which she wants to invest in share market with rebalancing target after every 10 days to start with for a period of one month from now. The present NIFTY is 5326. The minimum NIFTY within a month can at most be 4793.4. She wants to know as to how she should rebalance her portfolio under the following situations, according to the theory of Constant Proportion Portfolio Insurance Policy, using "2" as the multiplier:

   (1) Immediately to start with.

   (2) 10 days later-being the 1st day of rebalancing if NIFTY falls to 5122.96.

   (3) 10 days further from the above date if the NIFTY touches 5539.04.

   For the sake of simplicity, assume that the value of her equity component will change in tandem with that of the NIFTY and the risk free securities in which she is going to invest will have no Beta.

Foreign Exchange Exposure and Risk Management

8. 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 $Re. 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.

9. An exporter is a UK based company. Invoice amount is $3,50,000. Credit period is three months. Exchange rates in London are:

Spot Rate   ($/£) 1.5865 – 1.5905

3-month Forward Rate   ($/£) 1.6100 – 1.6140

Rates of interest in Money Market:

	Deposit	Loan
$	7%	9%
£	5%	8%

Compute and show how a money market hedge can be put in place. Compare and contrast the outcome with a forward contract.

International Financial Management

10. The directors of Implant Inc. wishes to make an equity issue to finance a $10 m (million) expansion scheme which has an excepted Net Present Value of $2.2m and to re-finance an existing $6 m 15% Bonds due for maturity in 5 years time. For early redemption of these bonds there is a $3,50,000 penalty charges. The Co. has also obtained approval to suspend these pre-emptive rights and make a $15 m placement of shares which will be at a price of $0.5 per share. The floatation cost of issue will be 4% of Gross proceeds. Any surplus funds from issue will be invested in IDRs which is currently yielding 10% per year.

    The Present capital structure of Co. is as under:

	'000
Ordinary Share ($1 per share)	7,000
Share Premium	10,500
Free Reserves	25,500
	43,000
15% Term Bonds	6,000
11% Debenture (2012-2020)	8,000
	57,000

    Current share price is $2 per share and debenture price is $ 103 per debenture. Cost of capital of Co. is 10%. It may be further presumed that stock market is semi-strong form efficient and no information about the proposed use of funds from the issue has been made available to the public. You are required to calculate expected share price of company once full details of the placement and to which the finance is to be put, are announced.

Interest Rate Risk Management

11. XYZ Inc. issues a £ 10 million floating rate loan on July 1, 2016 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, 2016:

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:

(i)   Effective interest paid out at each reset date,

(ii)   The average overall effective rate of interest p.a.

Reset Date	LIBOR (%)
31-12-2016	6.00
30-06-2017	7.50
31-12-2017	5.00
30-06-2018	4.00
31-12-2018	3.75
30-06-2019	4.25

Corporate Valuation

12.   The valuation of Hansel Limited has been done by an investment analyst. Based on an expected free cash flow of ₹ 54 lakhs for the following year and an expected growth rate of 9 percent, the analyst has estimated the value of Hansel Limited to be ₹ 1800 lakhs. However, he committed a mistake of using the book values of debt and equity.

The book value weights employed by the analyst are not known, but you know that Hansel Limited has a cost of equity of 20 percent and post tax cost of debt of 10 percent. The value of equity is thrice its book value, whereas the market value of its debt is nine-tenths of its book value. What is the correct value of Hansel Ltd?

Mergers, Acquisitions and Corporate Restructuring

13.   Reliable Industries Ltd. (RIL) is considering a takeover of Sunflower Industries Ltd. (SIL). The particulars of 2 companies are given below:

Particulars	Reliable Industries Ltd	Sunflower Industries Ltd.
Earnings After Tax (EAT)	₹ 20,00,000	₹ 10,00,000
Equity shares O/s	10,00,000	10,00,000
Earnings per share (EPS)	2	1
PE Ratio (Times)	10	5

Required:

(i)   What is the market value of each Company before merger?

(ii)   Assume that the management of RIL estimates that the shareholders of SIL will accept an offer of one share of RIL for four shares of SIL. If there are no synergic effects, what is the market value of the Post-merger RIL? What is the new price per

share? Are the shareholders of RIL better or worse off than they were before the merger?

(iii) Due to synergic effects, the management of RIL estimates that the earnings will increase by 20%. What are the new post-merger EPS and Price per share? Will the shareholders be better off or worse off than before the merger?

Theoretical Questions

14. (a) EXPLAIN the concept of side pocketing in mutual funds.

(b) EXPLAIN cash settlement and physical settlement in derivative contracts and their relative advantages and disadvantages.

(c) EXPLAIN the importance of IRDA.

15. (a) EXPLAIN Co-location/Proximity Hosting.

(b) DESCRIBE the factors affecting Industry Analysis.

(c) EXPLAIN the need for finance in case of a MSME unit. Describe the process for arrangement of finance in the case of MSME.

SUGGESTED ANSWERS/HINTS

1. The appropriate discount rate for valuing the bond for Mr. Z is:

R = 9% + 3% + 2% = 14%

Time	CF	PVIF 14% PV (CF)	PV (CF)
1	150	0.877	131.55
2	150	0.769	115.35
3	150	0.675	101.25
4	150	0.592	88.80
5	1150	0.519	596.85
		$\sum$ PV (CF) i.e. P_0 =	1033.80

Since, the current market value is less than the intrinsic value; Mr. Z should buy the bond. Current yield = Annual Interest / Price = 150 / 1025.86 = 14.62%

The YTM of the bond is calculated as follows:

@15%

P   = 150 × PVIFA $_{15\%, 4}$ + 1150 × PVIF $_{15\%, 5}$

    = 150 × 2.855 + 1150 × 0.497 = 428.25 + 571.55 = 999.80

@14%

As found in sub part (a) P_0 = 1033.80

By interpolation we get,

$$= 14\% + \frac{7.94}{7.94 - (-26.06)} \times (15\% - 14\%) = 14\% + \frac{7.94}{34}\%$$

YTM = 14.23%

2. The expected rate of return on equity after 2018 = 0.0625 + 1.10(0.055) = 12.3%

The dividends from 2013 onwards can be estimated as:

Year	2013	2014	2015	2016	2017	2018	2019
Earnings Per Share (€)	2.1	2.415	2.78	3.19	3.67	4.22	4.48
Dividends Per Share (€)	0.69	0.794	0.913	1.048	1.206	1.387	2.91

a.   The price as of 2018 = €2.91/(0.123- 0.06) = €46.19

b.   The required rate of return upto 2018 = 0.0625 + 1.4(0.055) = 13.95%. The dividends upto 2018 are discounted using this rate as follow:

Year	PV of Dividend
2014	0.794/1.1395 = 0.70
2015	$0.913/(1.1395)^2 = 0.70$
2016	$1.048/(1.1395)^3 = 0.70$
2017	$1.206/(1.1395)^4 = 0.72$
2018	$1.387/(1.1395)^5 = 0.72$
Total	3.54

The current price = €3.54 + €46.19/$(1.1395)^5$= €27.58.

3.   (i)

Probability	ABC (%)	XYZ (%)	1X2 (%)	1X3 (%)
(1)	(2)	(3)	(4)	(5)
0.20	12	16	2.40	3.2
0.25	14	10	3.50	2.5
0.25	-7	28	-1.75	7.0
0.30	28	-2	8.40	-0.6
Average return			12.55	12.1

Hence the expected return from ABC = 12.55% and XYZ is 12.1%

Probability	(ABC-$\overline{ABC}$)	(ABC-$\overline{ABC}$)²	1X3	(XYZ-$\overline{XYZ}$)	(XYZ-$\overline{XYZ}$)²	(1)X(6)
(1)	(2)	(3)	(4)	(5)	(6)	
0.20	-0.55	0.3025	0.06	3.9	15.21	3.04
0.25	1.45	2.1025	0.53	-2.1	4.41	1.10
0.25	-19.55	382.2025	95.55	15.9	252.81	63.20
0.30	15.45	238.7025	71.61	-14.1	198.81	59.64
			167.75			126.98

$$\sigma^2_{ABC} = 167.75(\%)^2 \; ; \; \sigma_{ABC} = 12.95\%$$

$$\sigma^2_{XYZ} = 126.98(\%)^2 \; ; \; \sigma_{XYZ} = 11.27\%$$

(ii) In order to find risk of portfolio of two shares, the covariance between the two is necessary here.

Probability	(ABC-$\overline{ABC}$)	(XYZ-$\overline{XYZ}$)	2X3	1X4
(1)	(2)	(3)	(4)	(5)
0.20	-0.55	3.9	-2.145	-0.429
0.25	1.45	-2.1	-3.045	-0.761
0.25	-19.55	15.9	-310.845	-77.71
0.30	15.45	-14.1	-217.845	-65.35
				-144.25

σ^2_P = (0.5² x 167.75) + (0.5² x 126.98) + 2 x (-144.25) x 0.5 x 0.5

σ^2_P = 41.9375 + 31.745 – 72.125

σ^2_P = 1.5575 or 1.56(%)

$\sigma_P = \sqrt{1.56}$ = 1.25%

E (R_p) = (0.5 x 12.55) + (0.5 x 12.1) = 12.325%

Hence, the return is 12.325% with the risk of 1.25% for the portfolio. Thus the portfolio results in the reduction of risk by the combination of two shares.

(iii) For constructing the minimum risk portfolio the condition to be satisfied is

$$X_{ABC} = \frac{\sigma^2_X - r_{AX}\sigma_A\sigma_X}{\sigma^2_A + \sigma^2_X - 2r_{AX}\sigma_A\sigma_X} \; \text{or} = \frac{\sigma^2_X - Cov._{AX}}{\sigma^2_A + \sigma^2_X - 2Cov._{AX}}$$

σ_X = Std. Deviation of XYZ

σ_A = Std. Deviation of ABC

r_{AX}= Coefficient of Correlation between XYZ and ABC

Cov.$_{AX}$ = Covariance between XYZ and ABC.

Therefore,

$$\% \text{ ABC} = \frac{126.98-(-144.25)}{126.98+167.75-\left[2\times(-144.25)\right]} = \frac{271.23}{583.23} = 0.46 \text{ or } 46\%$$

% ABC = 46%, XYZ = 54%

(1 – 0.46) =0.54

4.

Calculation of return on portfolio for 2009-10	(Calculation in ₹ / share)		
	M	N	
Dividend received during the year	10	3	
Capital gain/loss by 31.03.10			
Market value by 31.03.10	220	290	
Cost of investment	200	300	
Gain/loss	20	(-)10	
Yield	30	(-)7	
Cost	200	300	
% return	15%	(-)2.33%	
Weight in the portfolio	57	43	
Weighted average return			7.55%
Calculation of estimated return for 2010-11			
Expected dividend	20	3.5	
Capital gain by 31.03.11			
(220x0.2)+ (250x0.5)+(280x0.3) – 220=(253-220)	33	-	
(290x0.2)+(310x0.5)+(330x0.3) – 290= (312 – 290)	-	22	
Yield	53	25.5	
*Market Value 01.04.10	220	290	
% return	24.09%	8.79%	
*Weight in portfolio (1,000x220): (500x290)	60.3	39.7	
Weighted average (Expected) return			18.02%
(*The market value on 31.03.10 is used as the base for calculating yield for 10-11)			

Calculation of Standard Deviation

M Ltd.

Exp. market value	Exp. gain	Exp. div.	Exp Yield (1)	Prob. Factor (2)	(1) X(2)	Dev. $(P_M-\overline{P_M})$	Square of dev. (3)	(2) X (3)
220	0	20	20	0.2	4	-33	1089	217.80
250	30	20	50	0.5	25	-3	9	4.50
280	60	20	80	0.3	24	27	729	218.70
					53			σ^2_M = 441.00

Standard Deviation (σ_M)   21

N Ltd.

Exp. market value	Exp. gain	Exp. div.	Exp. Yield (1)	Prob. Factor (2)	(1) X (2)	Dev. $(P_N-\overline{P_N})$	Square of dev. (3)	(2) X (3)
290	0	3.5	3.5	0.2	0.7	-22	484	96.80
310	20	3.5	23.5	0.5	11.75	-2	4	2.00
330	40	3.5	43.5	0.3	13.05	18	324	97.20
					25.5			σ^2_N = 196.00

Standard Deviation (σ_N)   14

Share of company M Ltd. is more risky as the S.D. is more than company N Ltd.

5.   **Working Notes:**

(i)   Decomposition of Funds in Equity and Cash Components

	D Mutual Fund Ltd.	K Mutual Fund Ltd.
NAV on 31.12.14	₹ 70.71	₹ 62.50
% of Equity	99%	96%
Equity element in NAV	₹ 70	₹ 60
Cash element in NAV	₹ 0.71	₹ 2.50

(ii)   Calculation of Beta

(a)   D Mutual Fund Ltd.

$$\text{Sharpe Ratio} = 2 = \frac{E(R) - R_f}{\sigma_D} = \frac{E(R) - R_f}{11.25}$$

$E(R) - R_f = 22.50$

$$\text{Treynor Ratio} = 15 = \frac{E(R) - R_f}{\beta_D} = \frac{22.50}{\beta_D}$$

$\beta_D = 22.50/15 = 1.50$

(b) K Mutual Fund Ltd.

$$\text{Sharpe Ratio} = 3.3 = \frac{E(R) - R_f}{\sigma_K} = \frac{E(R) - R_f}{5}$$

$E(R) - R_f = 16.50$

$$\text{Treynor Ratio} = 15 = \frac{E(R) - R_f}{\beta_K} = \frac{16.50}{\beta_K}$$

$\beta_K = 16.50/15 = 1.10$

(iii) Decrease in the Value of Equity

	D Mutual Fund Ltd.	K Mutual Fund Ltd.
Market goes down by	5.00%	5.00%
Beta	1.50	1.10
Equity component goes down	7.50%	5.50%

(iv) Balance of Cash after 1 month

	D Mutual Fund Ltd.	K Mutual Fund Ltd.
Cash in Hand on 31.12.14	₹ 0.71	₹ 2.50
Less: Exp. Per month	₹ 0.25	₹ 0.25
Balance after 1 month	₹ 0.46	₹ 2.25

NAV after 1 month

	D Mutual Fund Ltd.	K Mutual Fund Ltd.
Value of Equity after 1 month 70 x (1 - 0.075)	₹ 64.75	-
60 x (1 - 0.055)	-	₹ 56.70
Cash Balance	0.46	2.25
	65.21	58.95

6. Cost of Call and Put Options

= (₹ 2 per share) x (100 share call) + (₹ 1 per share) x (100 share put)

= ₹ 2 x 100 + 1 x 100

= ₹ 300

(i) Price increases to ₹43. Since the market price is higher than the strike price of the call, the investor will exercise it.

Ending position = (- ₹ 300 cost of 2 option) + (₹ 1 per share gain on call) x 100

= - ₹ 300 + 100

Net Loss   = - ₹ 200

(ii) The price of the stock falls to ₹36. Since the market price is lower than the strike price, the investor may not exercise the call option.

Ending Position = (- ₹300 cost of 2 options) + (₹4 per stock gain on put) x 100

= - ₹300 + 400

Gain   = ₹100

7. Maximum decline in one month = $\dfrac{5326-4793.40}{5326} \times 100$ = 10%

(1) Immediately to start with

Investment in equity = Multiplier x (Portfolio value – Floor value)

= 2 (3,00,000 – 2,70,000) = ₹ 60,000

Indira may invest ₹ 60,000 in equity and balance in risk free securities.

(2) After 10 days

Value of equity = 60,000 x 5122.96/5326	=	₹ 57,713
Value of risk free investment	=	₹ 2,40,000
Total value of portfolio	=	₹ 2,97,713

Investment in equity = Multiplier x (Portfolio value – Floor value)

= 2 (2,97,713 – 2,70,000) = ₹ 55,426

Revised Portfolio:

Equity	=	₹ 55,426
Risk free Securities = ₹ 2,97,713 – ₹ 55,426	=	2,42,287

(3) After another 10 days

Value of equity = 55,426 x 5539.04/5122.96	=	₹ 59,928
Value of risk free investment	=	₹ 2,42,287
Total value of portfolio	=	₹ 3,02,215

Investment in equity = Multiplier x (Portfolio value – Floor value)

= 2 (3,02,215 – 2,70,000) = ₹   64,430

Revised Portfolio:

Equity   =   ₹ 64,430

Risk Free Securities = ₹ 3,02,215 – ₹ 64,430   =   ₹ 2,37,785

The investor should off-load ` 4502 of risk free securities and divert to Equity.

8.

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 x ₹15,000 = ₹1,50,000	
On September 1 Close at 0.02134	
Receipts = US$1,00,000/0.02133	= 46,88,233
Variation Margin = [(0.02134 – 0.02118) x 10 x 472000/-]/0.02133	
OR (0.00016x10x472000)/.02133 = 755.2/0.02133	35,406
	47,23,639
Less: Interest Cost – 1,50,000 x 0.08 x 3/12	₹3,000
Net Receipts	₹47,20,639
Receipts under different methods of hedging	
Forward contract	₹47,01,457
Futures	₹47,20,639
No hedge	
US$ 1,00,000/0.02133	₹46,88,233
The most advantageous option would have been to hedge with futures.	

9.   Identify: Foreign currency is an asset. Amount $ 3,50,000.

Create: $ Liability.

Borrow: In $. The borrowing rate is 9% per annum or 2.25% per quarter.

Amount to be borrowed: 3,50,000 / 1.0225 = $ 3,42,298.29

Convert: Sell $ and buy £. The relevant rate is the Ask rate, namely, 1.5905 per £,

(**Note:** This is an indirect quote). Amount of £s received on conversion is 2,15,214.27 (3,42,298.29/1.5905).

Invest: £ 2,15,214.27 will be invested at 5% for 3 months and get £ 2,17,904.45

Settle: The liability of $3,42,298.29 at interest of 2.25 per cent quarter matures to

$3,50,000 receivable from customer.

Using forward rate, amount receivable is = 3,50,000 / 1.6140 = £2,16,852.54

Amount received through money market hedge = £2,17,904.45

Gain = 2,17,904.45 – 2,16,852.54 = £1,051.91

So, money market hedge is beneficial for the exporter

10 In semi-strong form of stock market, the share price should accurately reflect new relevant information when it is made publicly available including Implant Inc. expansion scheme and redemption of the term loan.

The existing Market Value $ 2 x 7,000,000		$ 14,000,000
The new investment has an expected NPV		$ 2,200,000
Proceeds of New Issue		$ 15,000,000
Issue Cost of		($ 600,000)
PV of Benefit of early redemption		
Interest of $ 900,000 ($,6,000,000 x 15 %)x 3.791	3,411,900	
PV of Repayment in 5 years $ 6,000,000 x 0.621	3,726,000	
	7,137,900	
Redemption Cost Now	(6,000,000)	
Penalty charges	(350,000)	787,900
Expected Total Market value		31,387,900
New No. of shares (30 Million + 7 Million)		37,00,000
Expected Share Price of Company		$ 0.848

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

Cap Receipt

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

Floor Pay-off

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

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
31-12-2016	6.00	184	3,27,671	0	0	3,27,671
30-06-2017	7.50	181	3,96,712	24,795	0	3,71,917
31-12-2017	5.00	184	2,77,260	0	0	2,77,260
30-06-2018	4.00	181	1,98,356	0	0	1,98,356
31-12-2018	3.75	184	1,89,041	0	12,603	2,01,644
30-06-2019	4.25	182	2,36,849	0	0	2,36,849
Total		1096				16,26,094

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

$$\frac{16,26,094}{1,00,00,000} \times \frac{365}{1096} \times 100 = 5.42\%$$

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

Value of Firm = $V_0 = \dfrac{FCFF_1}{K_c - g_n}$

Where –

FCFF$_1$ = Expected FCFF in the year 1

K_c= Cost of capital

g_n = Growth rate forever

Thus, ₹ 1800 lakhs = ₹ 54 lakhs /(K_c-g)

Since g = 9%, then K_c = 12%

Now, let X be the weight of debt and given cost of equity = 20% and cost of debt = 10%, then 20% (1 – X) + 10% X = 12%

Hence, X = 0.80, so book value weight for debt was 80%

∴ Correct weight should be 60 of equity and 72 of debt.

∴ Cost of capital = K_c = 20% (60/132) + 10% (72/132) = 14.5455% and correct firm's value

= ₹ 54 lakhs/(0.1454 – 0.09) = ₹ 974.73 lakhs.

13. (i) Market value of Companies before Merger

Particulars	RIL	SIL
EPS	₹ 2	Re.1
P/E Ratio	10	5
Market Price Per Share	₹ 20	₹ 5
Equity Shares	10,00,000	10,00,000
Total Market Value	2,00,00,000	50,00,000

(ii) Post Merger Effects on RIL

	₹
Post merger earnings	30,00,000
Exchange Ratio (1:4)	
No. of equity shares o/s (10,00,000 + 2,50,000)	12,50,000
EPS: 30,00,000/12,50,000	2.4
PE Ratio	10
Market Value 10 x 2.4	24
Total Value (12,50,000 x 24)	3,00,00,000
Gains From Merger:	₹
Post-Merger Market Value of the Firm	3,00,00,000
Less: Pre-Merger Market Value	
RIL 2,00,00,000	
SIL 50,00,000	2,50,00,000
Total gains from Merger	50,00,000

Apportionment of Gains between the Shareholders:

Particulars	RIL(₹)	SIL(₹)
Post Merger Market Value:		
10,00,000 x 24	2,40,00,000	--
2,50,000 x 24	-	60,00,000
Less: Pre-Merger Market Value	2,00,00,000	50,00,000
Gains from Merger:	40,00,000	10,00,000

Thus, the shareholders of both the companies (RIL + SIL) are better off than before

(iii) Post-Merger Earnings:

Increase in Earnings by 20%

New Earnings: ₹ 30,00,000 x (1+0.20)	₹ 36,00,000
No .of equity shares outstanding:	12,50,000
EPS (₹ 36,00,000/12,50,000)	₹ 2.88
PE Ratio	10
Market Price Per Share: = ₹2.88 x 10	₹ 28.80

∴ Shareholders will be better-off than before the merger situation.

14. (a) In simple words, a Side Pocketing in Mutual Funds leads to separation of risky assets from other investments and cash holdings. The purpose is to make sure that money invested in a mutual fund, which is linked to stressed assets, gets locked, until the fund recovers the money from the company or could avoid distress selling of illiquid securities.

The modus operandi is simple. Whenever, the rating of a mutual fund decreases, the fund shifts the illiquid assets into a side pocket so that current shareholders can be benefitted from the liquid assets. Consequently, the Net Asset Value (NAV) of the fund will then reflect the actual value of the liquid assets.

Side Pocketing is beneficial for those investors who wish to hold on to the units of the main funds for long term. Therefore, the process of Side Pocketing ensures that liquidity is not the problem even in the circumstances of frequent allotments and redemptions.

Side Pocketing is quite common internationally. However, Side Pocketing has also been resorted to bereft the investors of genuine returns.

In India recent fiasco in the Infrastructure Leasing and Financial Services (IL&FS) has led to many discussions on the concept of side pocketing as IL&FS and its subsidiaries have failed to fulfill its repayments obligations due to severe liquidity crisis.

The Mutual Funds have given negative returns because they have completely written off their exposure to IL&FS instruments.

(b) The physical settlement in case of derivative contracts means that underlying assets are actually delivered on the specified delivery date. In other words, traders will have to take delivery of the shares against position taken in the derivative contract.

In case of cash settlement, the seller of the derivative contract does not deliver the underlying asset but transfers the Cash. It is similar to Index Futures where the purchaser, who wants to settle the contract in cash, will have to pay or receive the difference between the Spot price of the contract on the settlement date and the

Futures price decided beforehand since it is impossible to effect the physical ownership of the underlying securities.

The main advantage of cash settlement in derivative contract is high liquidity because of more derivative volume in cash segment. Moreover, the underlying stocks in derivative contracts has constricted bid-ask spreads. And, trading in such stocks can be effected at lower impact cost. If the stock is liquid, the impact cost of bigger trades will be lower.

Further, an adverse move can be hedged. For example, the investors can take a covered short derivative position by selling the future while still holding the underlying security.

Also, a liquid derivative market facilitates the traders to do speculation. The speculative trading may worry the regulators but it is also true that without speculative trading, it will not be possible for the derivative market to stay liquid.

So, this leads to some arguments in favour of physical settlement in derivative contract. One advantage of physical settlement is that it is not subject to manipulation by both the parties to the derivative contract. This is so because the entire activity is monitored by the broker and the clearing exchange.

However, one main disadvantage of physical delivery is that it is almost impossible to short sell a stock in the Indian Market.

Therefore, in the end, it can be concluded that, though, physical settlement in derivative contract does curb manipulation it also affects the liquidity in the derivative segment.

(c) **Importance of Insurance Regulatory and Development Authority (IRDA)**

(i) Regulation of Insurance Sector: IRDA has a significant effect on the overall regulation of Indian Insurance Sector. In order to keep the proper protection of the policy holder's interests, Insurance Regulatory and Development Authority (IRDA) closely observe the different activities of insurance sector in India.

(ii) Protection of Policyholders Interests: The core objective or purpose of the Insurance Regulatory and Development Authority is to protect the interests of policyholders and IRDA is doing that with aplomb.

(iii) Awareness to Insurance: In order to increase the awareness of insurance in the society, IRDA is trying to convince the prospective investors about the transparency of the system and the effort being put by the regulator to put this into practice.

(iv) Insurance Market: Insurance sector has grown leap and bounds due to the concerted efforts of Insurance Regulatory and Development Authority with respect to marketing of insurance products, competition & customer awareness.

(v) Development of Insurance Product: Insurance Regulatory and Development Authority (IRDA) has brought a revolution in the development of insurance products. The development of ULIPs (Unit-Linked Insurance Plans) is the result of privatization of the insurance sector.

(vi) Competition in the Insurance Sector: After the advent of privatization in the insurance sector by inviting private players, competition in the insurance sector has increased significantly leading to comparatively cheaper services and greater customer satisfaction.

(vii) Saving and Investment of Individual: Insurance Regulatory and Development Authority has made insurance a popular & profitable mode of investment and inculcate saving habits among various sections of the society.

(viii) Government Responsibility: Insurance Regulatory and Development Authority (IRDA) has make it sure that uniformity in the insurance sector is being ensured by helping in constant increase in the number of insurers, increasing competition, number of diversified products and diversification in the activities of the insurers.

(ix) Banks and Post Offices: Insurance sector is now giving security against any kind of uncertainty or risk, so the insurance sector has now become a popular medium for savings & investments and is gradually diverting the flow of funds from banks & post offices to insurance industry.

(x) Individual Life's: Insurance Regulatory and Development Authority has helped in developing an understanding of insurance by putting across a great impression over the life of a common man of the society.

(xi) Stock Market: Private players in the insurance have developed ULIPs (Unit-Linked Insurance plans) in order to attract more customers. ULIP is a byproduct of modern insurance market. Therefore, insurance products have made it simple for the companies to raise funds and have also attracted various sections of the society to invest in the stock market indirectly.

(xii) Indian Economy: Insurance Regulatory and Development Authority has an impact over the economic development of the country because money invested by investors or individuals in various types of insurance products has channelized the funds of a country for a non-economic activity to economic activity & has made available to the governments of a country in order to implement the various developmental activities in the country.

15. (a) The co-location or proximity hosting is a facility which is offered by the stock exchanges to stock brokers and data vendors whereby their trading or data-vending systems are allowed to be located within or at close proximity to the premises of the stock exchanges, and are allowed to connect to the trading platform of stock exchanges through direct and private network.

Moreover, pursuant to the recommendations of the Technical Advisory Committee (TAC) of SEBI, stock exchanges are advised to allow direct connectivity between co-location facility of one recognized stock exchange and the colocation facility of other recognized stock exchanges. Stock exchanges are also advised to allow direct connectivity between servers of a stock broker placed in colocation facility of a recognized stock exchange and servers of the same stock broker placed in colocation facility of a different recognized stock exchange. This facility should be available to all the co-located brokers, who are desirous to avail such connectivity, in a fair and equitable manner.

Further, in light of the public comments received and in consultation with Technical Advisory Committee (TAC) of SEBI and Secondary Market Advisory Committee (SMAC) of SEBI and in order to facilitate small and medium sized Members, who otherwise find it difficult to avail colocation facility, due to various reasons including but not limited to high cost, lack of expertise in maintenance and troubleshooting, etc. to avail co-location facility, SEBI has directed the stock exchanges to introduce **'Managed Co-location Services'**. Under this facility, space/rack in co-location facility shall be allotted to eligible vendors by the stock exchange along with provision for receiving market data for further dissemination of the same to their client members and the facility.

(b) The following factors may particularly be kept in mind while assessing the factors relating to an industry.

(i) *Product Life-Cycle:* An industry usually exhibits high profitability in the initial and growth stages, medium but steady profitability in the maturity stage and a sharp decline in profitability in the last stage of growth.

(ii) *Demand Supply Gap:* Excess supply reduces the profitability of the industry because of the decline in the unit price realization, while insufficient supply tends to improve the profitability because of higher unit price realization.

(iii) *Barriers to Entry:* Any industry with high profitability would attract fresh investments. The potential entrants to the industry, however, face different types of barriers to entry. Some of these barriers are innate to the product and the technology of production, while other barriers are created by existing firms in the industry.

(iv) *Government Attitude:* The attitude of the government towards an industry is a crucial determinant of its prospects.

(v) *State of Competition in the Industry:* Factors to be noted are- firms with leadership capability and the nature of competition amongst them in foreign and domestic market, type of products manufactured viz. homogeneous or highly differentiated, demand prospects through classification viz customer-wise/area-wise, changes in demand patterns in the long/immediate/ short run,

type of industry the firm is placed viz. growth, cyclical, defensive or decline.

(vi) Cost Conditions and Profitability: The price of a share depends on its return, which in turn depends on profitability of the firm. Profitability depends on the state of competition in the industry, cost control measures adopted by its units and growth in demand for its products.

(vii) Technology and Research: They play a vital role in the growth and survival of a particular industry. Technology is subject to change very fast leading to obsolescence. Industries which update themselves have a competitive advantage over others in terms of quality, price etc.

(c) No MSME unit can take off without monetary support. This **need** for finance can be classified into following types:

- Long and medium term loans

- Short term or working capital requirements

- Risk Capital

- Seed Capital/Marginal Money

- Bridge loans

Financial assistance in India for MSME units is available from a variety of institutions. The important ones are:

(i) Commercial/Regional Rural/Co-operative Banks.

(ii) SIDBI: Small Industries Development Bank of India (refinance and direct lending)

(iii) SFCs/SIDCs: State Financial Corporations (e.g. Delhi Financial Corporation)/State Industrial Development Corporations.

Long and medium term loans are provided by SFCs, SIDBI and SIDCs. Banks also finance term loans. This type of financing is needed to fund purchase of land, construction of factory building/shed and for purchase of machinery and equipment. The short-term loans are required for working capital requirements, which fund the purchase of raw materials and consumables, payment of wages and other immediate manufacturing and administrative expenses. Such loans are generally available from commercial banks. The commercial banks also sanction composite loan comprising of working capital and term loan up to a loan limit of Rs.1 crore.

For loans from financial institutions and commercial banks a formal application needs to be made. The details of documentation that need to be provided with the loan application are indicated below:

- Balance Sheet and Profit Loss Statement for last three consecutive years of firms owned by promoters

- Income Tax Assessment Certificates of Partners/Directors

- Proof of Possession of Land/Building

- Architect's estimate for construction cost

- Partnership deed/Memorandum and Articles of Associations of Company

- Project Report

- Budgetary Quotations of Plant and Machinery

A sanction or rejection letter is issued by bank after its assessment of the application. After receiving a sanction letter, applicants need to indicate in writing their acceptance of terms and conditions laid down by FI/Banks.

Subsequently, loan is disbursed according to the phased implementation of the project. In today's environment there are other choices apart from commercial banks and Government owned financial institutions. These options include venture capital funds and non-government finance companies.