

PAPER – 2 : STRATEGIC FINANCIAL MANAGEMENT

QUESTIONS

Capital Budgeting with Risk

1. Swissloto Co. has an investment proposal, requiring an outlay of Rs. 50,000. The investment proposal is expected to have 2 years' economic life with no salvage value. In year 1, there is a 0.3 probability that cash inflow after tax will be Rs. 30,000 and 0.7 probability that cash inflow after tax will be Rs. 35,000. The probabilities assigned to cash inflows after tax for the year II are as follows:

The Cash inflow year I	Rs. 30,000		Rs. 35,000	
The Cash inflow year II		Probability		Probability
	Rs. 12,000	0.3	Rs. 20,000	0.1
	Rs. 16,000	0.2	Rs. 25,000	0.5
	Rs. 22,000	0.5	Rs. 30,000	0.4

The firm uses a 10% discount rate for this type of investment.

Required:.

- (a) What net present value will the project yield if worst outcome is realized? What is the probability of occurrence of this NPV?
- (b) What will be the best and the probability of that occurrence?
- (c) Will the project be accepted?

(10% Discount factor	1 year	0.909
	2 year	0.826)

Project Beta

2. The total market value of the equity share of Raheja Company is Rs. 90,00,000 and the total value of the debt is Rs. 60,00,000. The treasurer estimated that the beta of the stock is currently 1.9 and that the expected risk premium on the market is 12 per cent. The treasury bill rate is 9 per cent.

Required:

- (1) What is the beta of the Company's existing portfolio of assets?
- (2) Estimate the Company's Cost of capital and the discount rate for an expansion of the company's present business.

Leasing

3. Naryanii Ltd. is in the business of manufacturing bearings. Some more product lines are

being planned to be added to the existing system. The machinery required may be bought or may be taken on lease. The cost of machine is Rs. 50,00,000 having a useful life of 5 years with the salvage value of Rs. 10,00,000. The full purchase value of machine can be financed by 20% loan repayable in five equal instalments falling due at the end of each year. Alternatively, the machine can be procured on a 5 years lease, year-end lease rentals being Rs. 14,00,000 per annum. The Company follows the written down value method of depreciation at the rate of 25%. Company's tax rate is 35 per cent.

Advise the company which option it should choose – lease or borrow.

International Investing

4. XYZ Ltd. is considering a project in Luxemburg, which will involve an initial investment of €1,30,00,000. The project will have 5 years of life. Current spot exchange rate is Rs.58 per €. The risk free rate in Germany is 8% and the same in India is 12%. Cash inflow from the project are as follows:

Year	Cash inflow
1	€30,00,000
2	€25,00,000
3	€35,00,000
4	€40,00,000
5	€60,00,000

Calculate the NPV of the project using foreign currency approach. Required rate of return on this project is 14%.

Right Issue

5. Chirayu Limited has issued 7,50,000 equity shares of Rs. 100 each. The current market price per share is Rs. 240. The company has a plan to make a rights issue of one new equity share at a price of Rs. 160 for every four share held.

You are required to:

- Calculate the theoretical post-rights price per share;
- Calculate the theoretical value of the right alone;
- Show the effect of the rights issue on the wealth of a shareholder, who has 1,000 shares assuming he sells the entire rights; and
- Show the effect, if the same shareholder does not take any action and ignores the issue.

Bond Valuation

6. The following data are available for a bond

Face value	Rs. 1,000
Coupon Rate	15%
Years to Maturity	6
Redemption value	Rs. 1,000
Yield to maturity	17%

What is the current market price, duration and volatility of this bond? Calculate the expected market price, if increase in required yield is by 75 basis points.

Cost of Capital

7. A share of Tension-out Economy Ltd. is currently quoted at, a price earning ratio of 8 times. The retained earning per share being 37.5% is Rs. 3 per share. Compute:
- (1) The company's cost of equity, if investors expect annual growth rate of 11%.
 - (2) If anticipated growth rate is 13% p.a., calculate the indicated market price, with same cost of capital.
 - (3) If the company's cost of capital is 18% and anticipated growth rate is 15% p.a., calculate the market price per share, assuming other conditions remain the same.

Future and Options

8. The market received rumour about XYZ Company's tie-up with a multinational company. This has induced the market price to move up. If the rumour is false, the XYZ Company 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 Rs.52 for Rs.2 premium, and paid Re.1 per share premium for a 3 months put with a striking price of Rs.50.

- (i) Determine the Investor's position if the tie up offer bids the price of stock up to Rs.53 in 3 months.
- (ii) Determine the Investor's ending position, if the tie up programme fails and the price of the stocks falls to Rs.46 in 3 months.

Future and Options

9. The 6-months forward price of a security is Rs.200. The borrowing rate is 8% per annum payable with monthly rests. What should be the spot price?

Financial Services

10. X Ltd. has a total sales of Rs. 4 crores and its average collection period is 90 days. The past experience indicates that bad-debt losses are 1.5% on Sales. The expenditure incurred by the firm in administering its receivable collection efforts are Rs. 6,00,000. A factor is prepared to buy the firm's receivables by charging 2% Commission. The factor

will pay advance on receivables to the firm at an interest rate of 18% p.a. after withholding 10% as reserve.

Calculate the effective cost of factoring to the Firm.

Portfolio Management

11. A Ltd., pays no taxes and is entirely financed by equity shares. The company's equity has a Beta of 0.6 and is expected to earn 20%. The company has now decided to buy back half of the equity shares by borrowing an equal amount. If the debt yield a risk free return of 10%. Calculate.
- (1) The beta of the equity shares after the buy back.
 - (2) The required return and risk premium on the equity shares before the buy back.
 - (3) The required return and risk premium on the equity shares after the buyback.
 - (4) The required return on debt.

Portfolio Management

12. The Investment portfolio of a REG EPF Trust is as follows:

Government Bond	Coupon Rate	Purchase rate (F.V. Rs. 100 per Bond)	Duration (Years)
G.O.I. 2008	11.68	106.50	3.50
G.O.I. 2012	7.55	105.00	6.50
G.O.I. 2017	7.38	105.00	7.50
G.O.I. 2024	8.35	110.00	8.75
G.O.I. 2034	7.95	101.00	13.00

Face value of total Investment is Rs. 5 crores in each Government Bond.

Calculate actual Investment in portfolio.

What is a suitable action to churn out investment portfolio in the following scenario?

1. Interest rates are expected to lower by 25 basis points.
2. Interest rates are expected to raise by 75 basis points.

Also calculate the revised duration of investment portfolio in each scenario.

Mutual Fund

13. Arun has invested in three Mutual Fund Schemes as per details below:

	MF X	MF Y	MF Z
Date of investment	01.12.2006	01.01.2007	01.03.2007
Amount of investment	Rs. 50,000	Rs. 1,00,000	Rs. 50,000
Net Asset Value (NAV) at entry date	Rs. 10.50	Rs. 10	Rs. 10

Dividend received upto 31.03.2007	Rs. 950	Rs. 1,500	Nil
NAV as at 31.03.2007	Rs. 10.40	Rs. 10.10	Rs. 9.80

Required:

What is the effective yield on per annum basis in respect of each of the three schemes to Mr. Arun upto 31.03.2007?

Merger and Acquisition

14. ABC Ltd., is considering merger with PQR Ltd. ABC Ltd.'s shares are currently traded at Rs. 20. It has 2,50,000 shares outstanding and its earnings after taxes (EAT) amount to Rs. 5,00,000. PQR Ltd., has 1,25,000 shares outstanding; its current market price is Rs. 10 and its EAT are Rs. 1,25,000. The merger will be effected by means of a stock swap (exchange). PQR Ltd., has agreed to a plan under which ABC Ltd., will offer the current market value of PQR Ltd.'s shares:
- What is the pre-merger earnings per share (EPS) and P/E ratios of both the companies?
 - If PQR Ltd.'s P/E ratio is 6.4, what is its current market price? What is the exchange ratio? What will ABC Ltd.'s post-merger EPS be?
 - What should be the exchange ratio, if ABC Ltd.'s pre-merger and post-merger EPS are to be the same?

Merger and Acquisition

15. Fuller Plc. is intending to acquire Felicy Plc. by merger and the following information is available in respect of the companies:

	Fuller Plc.	Felicy Plc.
Number of equity shares	1,00,000	60,000
Earnings after tax (£)	5,00,000	1,80,000
Market value per share (£)	42	28

Required:

- What is the present EPS of both the companies?
- If the proposed merger takes place, what would be the new earning per share for Fuller Plc.? Assume that the merger takes place by exchange of equity shares and the exchange ratio is based on the current market price.
- What should be exchange ratio, if Felicy Plc. wants to ensure the earnings to members are as before the merger takes place?

Foreign Exchange Management

16. (a) On 1st July 2008, 3 months interest rate in the US and Germany are 6.5 per cent

and 4.5 per cent per annum respectively. The \$/DM spot rate is 0.6560. What would be the forward rate for DM for delivery on 30th September 2008?

- (b) In International Monetary Market an international forward bid on December, 15 for one Euro (€) is \$ 1.2816 at the same time the price of IMM € future for delivery on December, 15 is \$ 1.2806. The contract size of Euro is € 62,500. How could the dealer use arbitrage in profit from this situation and how much profit is earned?

Foreign Exchange Management

17. In March, 2008, the Zed Pro Industries makes the following assessment of dollar rates per British pound to prevail as on 1.9.2008:

\$/Pound	Probability
1.60	0.15
1.70	0.20
1.80	0.25
1.90	0.20
2.00	0.20

- (i) What is the expected spot rate for 1.9.2008?
- (ii) If, as of March, 2008, the 6-month forward rate is \$ 1.80, should the firm sell forward its pound receivables due in September, 2008?

Foreign Exchange Management

18. On July 28, 2008 Unicon (an importer) requested a bank to remit Singapore Dollar (SGD) 2,50,000 under an irrevocable LC. However, due to bank strikes, the bank could effect the remittance only on August 4, 2008. The interbank market rates were as follows:

	July, 28	August 4
Bombay US\$1	= Rs. 45.85/45.90	45.91/45.97
London Pound 1	= US\$ 1.7840/1.7850	1.7765/1.7775
Pound 1	= SGD 3.1575/3.1590	3.1380/3.1390

The bank wishes to retain an exchange margin of 0.125%. How much does the customer stand to gain or lose due to the delay?

Financial Services

19. A Ltd. has to make a payment on 30th January, 2009 of Rs. 8 lakhs. It has surplus cash today, i.e. 31st October, 2008; 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?

Dividend Policy

20. Truly Plc presently pay a dividend of £1.00 per share and has a share price of £. 20.00.
- If this dividend were expected to grow at a rate of 12% per annum forever, what is the firm's expected or required return on equity using a dividend-discount model approach?
 - Instead of this situation in part (i), suppose that the dividends were expected to grow at a rate of 20% per annum for 5 years and 10% per year thereafter. Now what is the firm's expected, or required, return on equity?

Dividend Policy

21. The following figures are collected from the annual report of PQR Ltd.:

	Rs.
Net Profit	300 lakhs
Outstanding 12% preference shares	1000 lakhs
No. of equity shares	30 lakhs
Return on Investment	20%

What should be the approximate dividend pay-out ratio so as to keep the share price at Rs. 42 by using Walter model?

Multinational Capital Budgeting

22. An Indian company is planning to set up a subsidiary in US. The initial project cost is estimated to be US \$40 million; Working Capital required is estimated to be \$4 million.

The finance manager of company estimated the data as follows:

Variable Cost of Production (Per Unit Sold)	\$2.50
Fixed cost per annum	\$ 3 Million
Selling Price	\$ 10
Production capacity	5 million units
Expected life of Plant	5 years
Method of Depreciation	Straight Line Method (SLM)
Salvage Value at the end of 5 years	NIL

The subsidiary of the Indian company is subject to 40% corporate tax rate in the US and the required rate of return of such types of project is 12%. The current exchange rate is Rs.48/US\$ and the rupee is expected to depreciate by 3% per annum for next five years.

The subsidiary company shall be allowed to repatriate 70% of the CFAT every year along with the accumulated arrears of blocked funds at the end of 5 years, the withholding taxes are 10%. The blocked fund will be invested in the USA money market by the subsidiary, earning 4% (free of taxes) per year.

Determine the feasibility of having a subsidiary company in the USA, assuming no tax liability in India on earnings received by the parent company from the US subsidiary.

Decision Making

23. Methoex developed original specification of a product and founded Methoex Manufacturing Ltd. In 2007 the firm manufactured 980 Nos. at an average price of Rs. 900 each. In 2008 due to continuous price rise of the inputs, he raised his prices at an average of 12%, since he knew he could sell plant's full capacity of 980 Nos. per year. In spite of price rise for the product, which sold for over Rs. 1,000 for the first time, Methoex was surprised to learn in late 2008 (as may be seen from the financial statements) that Methoex Manufacturing Ltd. show a decline in earnings and still worse, decline in cash flow.

His accountant has brought the following:

- (i) We are following FIFO system for the purpose of issues.
- (ii) Costs are going up faster than 12% and they will go up further in 2009.
- (iii) We are not setting aside enough to replace the machinery; we need to set aside Rs. 1,65,000, not Rs. 1,50,000 so as to be able to buy new machinery.
- (iv) It is still not late to switch to LIFO for 2008. This will reduce closing inventory to Rs. 3,30,000 and raise cost of goods sold.

	Methoex Manufacturing Ltd. 2008	Income Statement (Rs. 000) 2007
Sales	1,008	900
Cost of goods sold		
Opening inventory	320	250
Raw material	500	400
Labour	200	174
Depreciation	150	150
End inventory	<u>(-390)</u>	<u>(-320)</u>
	780	654
Gross margin	228	246
Administration expenses	<u>100</u>	<u>92</u>
EBIT	128	154
Interest	<u>50</u>	<u>50</u>
	78	104
Income-tax	<u>39</u>	<u>52</u>
Profit after tax	39	52

Add: Non-cash expenses	150	150
Inventory change	<u>(-)70</u>	<u>(-)70</u>
Cash flow	<u>119</u>	<u>132</u>

Required:

- (1) What is the weighted average inflation factor for the firm using LIFO?
 - (2) If the firm desires a 15 per cent profit margin on sales, how much should the firm charge for the product per unit?
24. What are the investors' rights & obligations under the Mutual Fund Regulations?
25. Distinguish between:
- (a) Event-Described and Activity-Described Network
 - (b) Primary Market and Secondary Market
 - (c) Caps & Floors Vs. Swaptions

SUGGESTED ANSWERS/HINTS

1.	I Year	II Year	
Prob.	Cash Inflow	Prob.	Cash Inflow
0.3	30000	0.3	12,000
		0.2	16,000
		0.5	22,000
0.7	35000	0.1	20,000
		0.5	25,000
		0.4	30,000
		J. Prob.	
			$0.3 \times 0.3 = 0.09$ (Path 1)
			$0.3 \times 0.2 = 0.06$ (Path 2)
			$0.3 \times 0.5 = 0.15$ (Path 3)
			$0.7 \times 0.1 = 0.07$ (Path 4)
			$0.7 \times 0.5 = 0.35$ (Path 5)
			$0.7 \times 0.4 = 0.28$ (Path 6)

The table given above shows that there are six possible outcomes each represented by a path. The net present value of each path at 10% discount rate is given below:

Path	(Cash inflow year 1 × discount factor year 1)	(Cash inflow year 2 × discount factor year 2)	Total Cash inflow	Cash outflow	Net present value
	(a)	(b)	(c) = (a) + (b)	(d)	(e) = (c) – (d)
			Rs.	Rs.	Rs.
1	(Rs. 30,000 × 0.909) = 27,270	(Rs. 12,000 × 0.826) = 9,912	37,182	50,000	–12,818
2	(Rs. 30,000 × 0.909) = 27,270	(Rs. 16,000 × 0.826) = 13,216	40,486	50,000	–9,514

3	(Rs. 30,000 × 0.909) = 27,270	(Rs. 22,000 × 0.826) = 18,172	45,442	50,000	-4,558
4	(Rs. 35,000 × 0.909) = 31,815	(Rs. 20,000 × 0.826) = 16,520	48,335	50,000	-1,665
5	(Rs. 35,000 × 0.909) = 31,815	(Rs. 25,000 × 0.826) = 20,650	52,465	50,000	2,465
6	(Rs. 35,000 × 0.909) = 31,815	(Rs. 30,000 × 0.826) = 24,780	56,595	50,000	6,595

Statement showing the expected net present value

Path	Net present value @ 10% (Refer above)	Joint probability (Refer above)	Expected Net present value
	(a)	(b)	(a) × (b)
1	-12,818	0.09	-1,153.62
2	-9,514	0.06	-570.84
3	-4,558	0.15	-683.70
4	-1,665	0.07	-116.55
5	2,465	0.35	862.75
6	6,595	0.28	<u>1,846.60</u>
			<u>184.64</u>

- (a) If the worst outcome is realized the Net present value which the project will yield is Rs. 12,818 (negative). The probability of occurrence of this Net present value is 9%.
- (b) The best outcome will be path 6 when Net present value is higher i.e. Rs. 6,595 (positive). The probability of occurrence of this Net present value is 28%.
- (c) Yes, the project will be accepted since the Expected Net present value × probability sum total is positive.

$$2. \quad (1) \quad \beta_{\text{company assets}} = \beta_{\text{equity}} \times \frac{V_E}{V_0} + \beta_{\text{debt}} \times \frac{V_D}{V_0}$$

If company's debt capital is riskless than above relationship become:

$$\text{Here } \beta_{\text{equity}} = 1.9 \beta_{\text{assets}} = \beta_{\text{equity}} \frac{V_E}{V_0}$$

$$\beta_{\text{debt}} = 0$$

Note: Since β_{debt} is not given it is assumed that company debt capital is virtually riskless.

$$V_E = \text{Rs. 90 lakhs.}$$

$$V_D = \text{Rs. 60 lakhs.}$$

$$V_0 = \text{Rs. 150 lakhs.}$$

$$\beta_{\text{company assets}} = 1.9 \times \frac{\text{Rs. 90 lakhs}}{\text{Rs. 150 lakhs}} = 1.14$$

(2) Company's cost of capital = $R_F + \beta_A \times \text{Risk premium}$

Where R_F = Risk free rate of return

β_A = Beta of company assets

Therefore, company's cost of capital = $9\% + 1.14 \times 12\% = 22.68\%$

In case of expansion of the company's present business, the same rate of return i.e. 22.68% will be used. However, in case of diversification into new business the risk profile of new business is likely to be different. Therefore, different discount factor has to be worked out for such business.

3. P.V. of Cash outflow under lease option

(in Rs.)			
Year	Lease Rental after tax	PVIFA @ 13%	Total P.V.
1 – 5	14,00,000 (I – T)	20% (I – T)	
	= 9,10,000	3.517	32,00,470

Cash Outflow under borrowing option

5 equal instalments

Rs. 50,00,000 ÷ 2.991 (PVIFA 20%) = 16,71,681

Tax Advantage						
Year	Loan Instalments	On Interest	On Depreciation	Net Cash Outflow	PVIF 13%	Total PV
1	16,71,681	3,50,000	4,37,500	8,84,181	.885	7,82,500
2	16,71,681	3,02,982	3,28,125	10,40,574	.783	8,14,769
3	16,71,681	2,46,561	2,46,094	11,79,026	.693	8,17,065
4	16,71,681	1,78,856	1,84,570	13,08,255	.613	8,01,960
5	16,71,681	97,609	1,38,428	14,35,644	.543	<u>7,79,555</u>
						<u>39,95,850</u>

Total PV	39,95,850
Less: PV Salvage value adjusted for Tax savings on loss of sale of machinery	5,78,449
(Rs. 10,00,000 × .543 = Rs. 5,43,000) + (Rs. 35,449)	
(See Working Note on Depreciation)	
11,86,523 – 10,00,000 =	
1,86,523 × .35 × .543 = 35,449	
Total present value of cash outflow	<u>34,17,401</u>

Decision: PV of cash outflow of lease option is less than the borrowing option and hence lease option is recommended.

Working Notes:

1. Debt and Interest Payments

Year	Loan Instalments	Loan at the beginning of the year	Interest	Principal	Balance at the end of year
1	16,71,681	50,00,000	10,00,000	671,681	43,28,319
2	16,71,681	43,28,319	865,664	806,017	35,22,302
3	16,71,681	35,22,302	704,460	967,221	25,55,081
4	16,71,681	25,55,081	511,016	11,60,665	13,94,416
5	16,71,681	13,94,416	278,883	13,92,798	-

2.

Year	Depreciation
1	50,00,000 × .25 = 12,50,000
2	37,50,000 × .25 = 9,37,500
3	28,12,500 × .25 = 7,03,125
4	21,09,375 × .25 = 5,27,344
5	15,82,031 × .25 = 3,95,508

$$\text{B.V. of machine} = 15,82,031 - 3,95,508 = 11,86,523.$$

$$4. (1 + 0.12) (1 + \text{Risk Premium}) = (1 + 0.14)$$

$$\text{Or, } 1 + \text{Risk Premium} = 1.14/1.12 = 1.0179$$

$$\text{Therefore, Risk adjusted dollar rate is } = 1.0179 \times 1.08 = 1.099 - 1 = 0.099$$

Calculation of NPV

Year	Cash flow (Million)	PV Factor at 9.9%	P.V.
1	3.00	0.910	2.73
2	2.50	0.828	2.070
3	3.50	0.753	2.636
4	4.00	0.686	2.744
5	6.00	0.624	<u>3.744</u>
			13.924
		Less: Investment	<u>13.000</u>
		NPV	<u>0.924</u>

Therefore, Rupee NPV of the project is = Rs. (58 x 0.924) Million
= Rs.53.592 Million

5. (i) Calculation of theoretical Post-rights (ex-right) price per share:

$$\text{Ex-right value} = \left[\frac{MN + SR}{N + R} \right]$$

Where M = Market price,
N = Number of old shares for a right share
S = Subscription price
R = Right share offer

$$= \left[\frac{(\text{Rs. } 240 \times 4) + (\text{Rs. } 160 \times 1)}{4 + 1} \right]$$

= Rs. 224

- (ii) Calculation of theoretical value of the rights alone:

= Ex-right price – Cost of rights share

= Rs. 224 – Rs. 160 = Rs. 64

- (iii) Calculation of effect of the rights issue on the wealth of a shareholder who has 1,000 shares assuming he sells the entire rights:

Rs.

(a) Value of shares before right issue
(1,000 shares × Rs. 240) 2,40,000

(b)	Value of shares after right issue	
	(1,000 shares × Rs. 224)	2,24,000
	Add: Sale proceeds of rights renunciation	
	(250 shares × Rs. 64)	<u>16,000</u>
		<u>2,40,000</u>

There is no change in the wealth of the shareholder if he does not take any action and ignores the issue.

- (iv) Calculation of effect if the shareholder does not take any action and ignores the issue:

	Rs.
Value of shares before right issue	
(1,000 shares × Rs. 240)	2,40,000
Less: Value of shares after right issue	
(1,000 shares × Rs. 224)	<u>2,24,000</u>
Loss of wealth to shareholders, if rights ignored	<u>16,000</u>

6. 1. Calculation of Market price:

$$YTM = \frac{\text{Coupon interest} + \left(\frac{\text{Discount or premium}}{\text{Years left}} \right)}{\frac{\text{Face Value} + \text{Market value}}{2}}$$

Discount or premium – YTM is more than coupon rate, market price is less than Face Value i.e. at discount.

Let X be the market price

$$0.17 = \frac{150 + \left\{ \frac{(1,000 - x)}{6} \right\}}{\frac{1,000 + x}{2}}$$

$$x = \text{Rs. } 920.53$$

Alternatively, the candidate may attempt by

$$\begin{aligned} & 150 (\text{PVIFA } 17,6) + 1,000 (\text{PVIFA } 17,6) \\ &= 150 (3.589) + 1,000 (0.390) \\ &= 538.35 + 390 \\ &= 928.35 \end{aligned}$$

2. Duration

Year	Cash flow	P.V. @ 17%		Proportion of bond value	Proportion of bond value x time (years)
1	150	.855	128.25	0.138	0.138
2	150	.731	109.65	0.118	0.236
3	150	.624	93.60	0.101	0.302
4	150	.534	80.10	0.086	0.345
5	150	.456	68.40	0.074	0.368
6	1150	.390	<u>448.50</u>	0.483	2.898
			<u>928.50</u>	<u>1.000</u>	<u>4.288</u>

Duration of the Bond is 4.288 years

3. Volatility

$$\text{Volatility of the bonds} = \frac{\text{Duration}}{(1 + \text{yields})} = \frac{4.288}{1.17}$$

$$= 3.67$$

4. The expected market price if increase in required yield is by 75 basis points.

$$= \text{Rs. } 920.53 \times .75 (3.67/100)$$

$$= \text{Rs. } 25.338$$

Hence expected market price is Rs. 920.53 – Rs. 25.338 = Rs. 895.192

Hence, the market price will decrease

This portion can also be alternatively done as follows

$$= \text{Rs. } 928.35 \times .75 (3.67/100)$$

$$= \text{Rs. } 25.553$$

then the market price will be

$$= \text{Rs. } 928.35 - 25.553 = \text{Rs. } 902.797$$

7. 1. Calculation of cost of capital

Retained earnings	37.5%	Rs. 3 per share
Dividend*	62.5%	Rs. 5 per share
EPS	100.0%	Rs. 8 per share
P/E ratio	8 times	
Market price is Rs. 8 × 8 = Rs. 64 per share		

Cost of equity capital = (Dividend/price × 100) + growth %
 = (5/64 × 100) + 11% = 18.81%.

$$* \left(\frac{\text{Rs. } 3}{37.5} \times 62.5 = \text{Rs. } 5 \right)$$

2. Market price = Dividend/(cost of equity capital % – growth rate %) = 5/(18.81% – 13%) = 5/5.81% = Rs. 86.06 per share.

3. Market price = Dividend/(cost of equity capital % – growth rate %) = 5/(18% – 15%) = 5/3% = Rs. 166.66 per share.

8. Cost of call and put options

= (Rs.2 per share) × (100 share call) + (Rs.1 per share) × (100 share put)
 = Rs.2 × 100 + 1 × 100
 = Rs.300

(i) Price increases to Rs.53. Since the market price is higher than the strike price of the call, the investor will exercise it.

Ending position = (–Rs.300 cost of option) + (Rs.1 per share gain on call) × 100
 = –Rs.300 + 100

Net Loss = Rs.200

(ii) The price of the stock falls to Rs.46. Since the market price is lower than the strike price, the investor may not exercise the call option but shall exercise put option.

Ending Position = (–Rs.300 cost of option) + (Rs.4 per stock gain on put) × 100
 = –Rs.300 + 400

Gain = Rs.100

Note: Student may please note that in the above question the lot size has been assumed to be 100. However, this question can be solved by assuming any quantity instead of 100 share call say 1,10,1000 etc.

9. Calculation of spot price

The formula for calculating forward price is:

$$A = P (1+r/n)^{nt}$$

Where

A = Forward price

P = Spot Price

r = rate of interest

n = no. of compounding

t = time

Using the above formula,

$$200 = P (1 + 0.08/12)^6$$

$$\text{Or } 200 = P \times 1.0409$$

$$P = 200/1.0409 = 192.14$$

Hence, the spot price should be Rs.192.14.

10.		Rs.'000
(a)	Average level of Receivables = $4,00,00,000 \times 90/360$	10,000
(b)	Factoring commission = $1,00,00,000 \times 2/100$	200
(c)	Factoring reserve = $1,00,00,000 \times 10/100$	1,000
(d)	Amount available for advance = Rs. $1,00,00,000 - (2,00,000 + 10,00,000) [(a) - (b) - (c)]$	8,800
(e)	Factor will deduct his interest @ 18%:-	
(f)	Interest = $\frac{\text{Rs. } 88,00,000 \times 18 \times 90}{100 \times 360} =$	396
(g)	$\therefore$ Advance to be paid= Rs. $88,00,000 - \text{Rs. } 3,96,000$	8,404

Annual Cost of Factoring to the Firm:	Rs.
Factoring commission (Rs. $2,00,000 \times 360/90$)	8,00,000
Interest charges (Rs. $3,96,000 \times 360/90$)	<u>15,84,000</u>
Total	<u>23,84,000</u>
Firm's Savings on taking Factoring Service:	Rs.
Cost of credit administration saved	6,00,000
Cost of Bad Debts (Rs. $4,00,00,000 \times 1.5/100$) avoided	<u>6,00,000</u>
Total	<u>12,00,000</u>
Net cost to the Firm (Rs. $23,84,000 - \text{Rs. } 12,00,000$)	<u>11,84,000</u>
Effective rate of interest to the firm = $\frac{\text{Rs. } 11,84,000 \times 100}{84,04,000}$	14.09%

Note: The number of days in a year have been assumed to be 360 days.

11. (1) The β of the equity share after the buyback. The company was unleveraged before the buyback. Leverage after buyback is 50:50.

$$\beta \text{ (Levered Equity)} = \beta \text{ (unlevered Equity)} \left[1 + \frac{D(1-t)}{E} \right]$$

$$\beta \text{ (Levered Equity)} = 0.6 \left[1 + \frac{50}{50} (1 - 0) \right] = 1.20 \text{ (}\beta \text{ after buyback).}$$

- (2) The required return and risk premium on the equity share before the buyback.

Required return after buyback = 20%

Risk Premium = $\beta (R_m - R_f) = \text{Required Return} - R_f$

= 20% - 10% = 10%.

- (3) The required return and risk premium on the equity shares after buyback.

Since before buyback $\beta = 0.6$.

Risk Premium = $0.6 (R_m - 10\%) = 10\%$.

$R_m = 26.67\%$

Market Risk Premium = $(R_m - R_f) = 26.67\% - 10\% = 16.67\%$.

Required equity return after buyback = $R_f + \beta (R_m - R_f)$

= $10\% + 1.20 (26.67\% - 10\%) = 30\%$.

Risk premium on equity returns after buyback = $30\% - 10\% = 20\%$.

Overall rate of return required after buyback

= $0.50 \times 30\% + 0.50 \times 10\%$.

= 20% (Same as before buyback)

- (4) Required return on Debt

$R_f = 10\%$ (Assuming that to be risk free).

12. Calculation of Actual investment of Portfolio

Security	Purchase price	Investment (Rs. in lakhs)
G.O.I. 2008	106.50	532.50*
G.O.I. 2012	105.00	525.00
G.O.I. 2017	105.00	525.00
G.O.I. 2024	110.00	550.00
G.O.I. 2034	101.00	<u>505.00</u>
	Total	<u>2,637.50</u>

* $\frac{\text{Rs. 5 crores}}{\text{Rs. } 100 \times 1,00,000} \times \text{Rs. } 106.50$

Average Duration = $\frac{3.5 + 6.5 + 7.5 + 8.75 + 13.00}{5}$

$$= \frac{39.25}{5} = 7.85$$

Suitable action to churn out investment portfolio in following scenario.

To reduce risk and to maximize profit or minimize losses.

- (1) Interest rates are expected to be lower by 25 basis points in such case increase the average duration by purchasing GOI 2034 and Disposing of GOI 2008.

$$\begin{aligned} \text{Revised average duration shall be} &= \frac{39.25 - 3.5 + 13}{5} \\ &= \frac{48.75}{5} = 9.75 \text{ years} \end{aligned}$$

- (2) Interest rates are expected to rise by 75 basis points in such case reduce the average duration by (*) Purchasing GOI 2012 and disposing of GOI 2034.

$$\begin{aligned} \text{Revised average duration shall be} &= \frac{39.25 - 13 + 6.5}{5} \\ &= \frac{32.75}{5} = 6.55 \text{ years} \end{aligned}$$

(*) Purchasing of GOI 2008 is not beneficial as maturity period is very short and 75 basis points is comparatively higher change.

13.	Scheme	Investment	Unit Nos.	Unit NAV 31.3.2007	Total NAV 31.3.2007
		Rs.		Rs.	Rs.
	MFY	50,000	4761.905	10.40	49,523.812
	MFZ	1,00,000	10,000	10.10	1,01,000
	MFZ	50,000	5,000	9.80	49,000

Scheme	NAV (+) / (-)	Dividend Received	Total Yield	Number of days	Effective Yield (% P.A.)
	Rs.	Rs.	Rs.		
MFY	(-)476.188	950	473.812	122	2.835%
MFZ	(+)1,000	1,500	2,500	91	10.027%
MFZ	(-)1,000	Nil	(-)1,000	31	(-)24%

14. (i) Pre-merger EPS and P/E ratios of ABC Ltd. and PQR Ltd.

Particulars	ABC Ltd.	PQR Ltd.
Earning after taxes	5,00,000	1,25,000
Number of shares outstanding	2,50,000	1,25,000
EPS	2	1
Market Price per share	20	10
P/E Ratio (times)	10	10

- (ii) Current Market Price of PQR Ltd. if P/E ratio is 6.4 = Rs. 1 × 6.4 = Rs. 6.40

$$\text{Exchange ratio} = \frac{\text{Rs. 20}}{6.40} = 3.125$$

Post merger EPS of ABC Ltd.

$$= \frac{\text{Rs. 5,00,000} + \text{Rs. 1,25,000}}{\text{Rs. 2,50,000} + (\text{Rs. 1,25,000}/3.125)}$$

$$= \frac{\text{Rs. 6,25,000}}{\text{Rs. 2,90,000}} = 2.16$$

- (iii) Desired exchange ratio

Total number of shares in post-merged company

$$= \frac{\text{Post-merger earnings}}{\text{Pre-merger EPS of ABC Ltd}} = \frac{\text{Rs. 6,25,000}}{2} = 3,12,500$$

Number of shares required to be issued

$$= 3,12,500 - 2,50,000 = 62,500$$

Therefore, the exchange ratio is

$$62,500 : 1,25,000$$

$$= \frac{62,500}{1,25,000} = 0.50$$

15. (i) Earnings per share = Earnings after tax / No. of equity shares

$$\text{Fuller Plc.} = \text{£ } 5,00,000 / 1,00,000 = \text{£ } 5$$

$$\text{Felicity Plc.} = \text{£ } 1,80,000 / 60,000 = \text{£ } 3$$

- (ii) Number of Shares Felicity Plc.'s shareholders will get in Fuller Plc. based on market value per share = £ 28 / 42 × 60,000 = 40,000 shares

$$\text{Total number of equity shares of Fuller Plc. after merger} = 1,00,000 + 40,000 = 1,40,000 \text{ shares}$$

Earnings per share after merger = £ 5,00,000 + £1,80,000 / 1,40,000 = £ 4.86

- (iii) Calculation of exchange ratio to ensure shareholders of Felicy Plc. to earn the same as was before merger:

Shares to be exchanged based on EPS = (£ 3/£ 5) × 60,000 = 36,000 shares

EPS after merger = (£ 5,00,000 + £1,80,000)/1,36,000 = £ 5

Total earnings in Fuller Plc. available to shareholders of Felicy Plc. = 36,000 × £ 5 = £ 1,80,000.

Exchange ratio based on market price is beneficial to shareholders of Felicy Plc. because of higher Earnings available to them i.e. (40,000 shares × £ 4.86 = £ 194,400).

16. (a)	USD	DM
Spot	0.6560	1.000
Interest rate p.a.	6.5%	4.5%
Interest for 92 days	0.0107	0.0113
Amount after 92 days	0.6667	1.0113
Hence forward rate	<u>0.6667</u>	0.6593
	1.0113	

OR

$$\text{Forward rate} = \frac{0.6560 \times \left\{ 1 + \left(0.065 \times \frac{92}{365} \right) \right\}}{\left\{ 1 + \left(0.045 \times \frac{92}{365} \right) \right\}}$$

$$= 0.65927$$

- (b) Buy € 62500 × 1.2806 = \$ 80037.50
 Sell € 62500 × 1.2816 = \$ 80100.00
 Profit \$ 62.50

Alternatively if the market comes back together before December 15, the dealer could unwind his position (by simultaneously buying € 62,500 forward and selling a futures contract. Both for delivery on December 15) and earn the same profit of \$ 62.50.

17. (i) Calculation of expected spot rate for September, 2008:

\$ for £	Probability	Expected \$/£
(1)	(2)	(1) × (2) = (3)
1.60	0.15	0.24

1.70	0.20	0.34
1.80	0.25	0.45
1.90	0.20	0.38
2.00	<u>0.20</u>	<u>0.40</u>
	<u>1.00</u>	EV = <u>1.81</u>

Therefore, the expected spot value of \$ for £ for September, 2008 would be \$ 1.81.

(ii) If the six-months forward rate is \$ 1.80, the expected profits of the firm can be maximised by retaining its pounds receivable.

18. On July 28, 2008 the importer customer requested to remit SGD 2,50,000.

To consider sell rate for the bank:

US \$	=	Rs. 45.90
Pound 1	=	US\$ 1.7850
Pound 1	=	SGD 3.1575
Therefore, SGD 1	=	$\frac{\text{Rs. } 45.90 \times 1.7850}{\text{SGD } 3.1575}$

SGD 1 =	Rs. 25.9482
Add: Exchange margin (0.125%)	<u>Rs. 0.0324</u>
	<u>Rs. 25.9806</u>

On August 4, 2008 the rates are

US \$	=	Rs. 45.97
Pound 1	=	US\$ 1.7775
Pound 1	=	SGD 3.1380

Therefore, SGD 1 =	$\frac{\text{Rs. } 45.97 \times 1.7775}{\text{SGD } 3.1380}$
--------------------	--

SGD 1 =	Rs. 26.0394
Add: Exchange margin (0.125%)	<u>Rs. 0.0325</u>
	<u>Rs. 26.0719</u>

Hence, loss to the importer

= SGD 2,50,000 (Rs.26.0719 – Rs.25.9806)

= Rs. 22,825

19. Calculation of Investment Amount

Amount required for making payment on 30th January, 2004 = Rs. 8,00,000

Investment in Certificates of Deposit (CDs) on 31st October, 2008

Rate of interest = 8% p.a.

No. of days to maturity = 91 days

Interest on Re. 1 of 91 days

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

Amount to be received for Re. 1

(Re.1.00 + Re. 0.0199452) = 1.0199452

Calculation of amount to be invested now to get Rs. 8 lakhs after 91 days:

$$= \frac{\text{Rs. 8,00,000}}{\text{Rs. 1.0199452}} = \text{Rs. 7,84,355.86}$$

Or, Rs. 7,84,356 or Rs. 7,84,000 approximately.

20. (i) Firm's expected or required return on equity
(Using a dividend discount model approach)

According to Dividend discount model approach the firm's expected or required return on equity is computed as follows:

$$K_e = \frac{D_1}{P_0} + g$$

Where,

K_e = Cost of equity share capital or (Firm's expected or required return on equity share capital)

D_1 = Expected dividend at the end of year 1

P_0 = Current market price of the share.

g = Expected growth rate of dividend.

Now, $D_1 = D_0 (1 + g)$ or £1 (1 + 0.12) or £1.12, $P_0 = £20$ and $g = 12\%$ per annum

$$\text{Therefore, } K_e = \frac{£1.12}{£20} + 12\%$$

or $K_e = 17.6\%$

- (ii) Firm's expected or required return on equity

(if dividends were expected to grow at a rate of 20% per annum for 5 years and 10% per year thereafter)

Since in this situation if dividends are expected to grow at a super normal growth rate g_s , for n years and thereafter, at a normal, perpetual growth rate of g_n beginning

in the year $n + 1$, then the cost of equity can be determined by using the following formula:

$$P_0 = \sum_{t=1}^n \frac{\text{Div}_0 (1+g_s)^t}{(1+K_e)^t} + \frac{\text{Div}_{n+1}}{K_e - g_n} \times \frac{1}{(1+K_e)^n}$$

Where,

- g_s = Rate of growth in earlier years.
- g_n = Rate of constant growth in later years.
- P_0 = Discounted value of dividend stream.
- K_e = Firm's expected, required return on equity (cost of equity capital).

Now,

$g_s = 20\%$ for 5 years, $g_n = 10\%$

Therefore,

$$P_0 = \sum_{t=1}^5 \frac{D_0 (1+0.20)^t}{(1+K_e)^t} + \frac{\text{Div}_{5+1}}{K_e - 0.10} \times \frac{1}{(1+K_e)^t}$$

$$P_0 = \frac{1.20}{(1+K_e)^1} + \frac{1.44}{(1+K_e)^2} + \frac{1.73}{(1+K_e)^3} + \frac{2.07}{(1+K_e)^4} + \frac{2.49}{(1+K_e)^5} + \frac{2.49(1+0.10)}{K_e - 0.10} \times \frac{1}{(1+K_e)^5}$$

$$\text{or } P_0 = \text{£}1.20 (\text{PVF}_1, K_e) + \text{£}1.44 (\text{PVF}_2, K_e) + \text{£}1.73 (\text{PVF}_3, K_e) + \text{£}2.07$$

$$(\text{PVF}_4, K_e) + \text{£}2.49 (\text{PVF}_5, K_e) + \frac{\text{£}2.74 (\text{PVF}_5, K_e)}{K_e - 0.10}$$

By trial and error we are required to find out K_e

Now, assume $K_e = 18\%$ then we will have

$$\begin{aligned} P_0 &= \text{£}1.20 (0.8475) + \text{£}1.44 (0.7182) + \text{£}1.73 (0.6086) + \text{£}2.07 (0.51589) + \text{£}2.49 \\ &\quad (0.43710) + \text{£}2.74 (0.4371) \times \frac{1}{0.18 - 0.10} \\ &= \text{£}1.017 + \text{£}1.034 + \text{£}1.052 + \text{£}1.067 + \text{£}1.09 + \text{£}14.97 \\ &= \text{£}20.23 \end{aligned}$$

Since the present value of dividend stream is more than required it indicates that K_e is greater than 18%.

Now, assume $K_e = 19\%$ we will have

$$\begin{aligned}
 P_0 &= \text{£}1.20 (0.8403) + \text{£} 1.44 (0.7061) + \text{£}1.73 (0.5934) + \text{£}2.07 (0.4986) + \text{£}2.49 \\
 &\quad (0.4190) + \text{£}2.74 (0.4190) \times \frac{1}{0.19 - 0.10} \\
 &= \text{£}1.008 + \text{£}1.016 + \text{£}1.026 + \text{£}1.032 + \text{£}1.043 + \text{£}12.76 \\
 &= \text{£}17.89
 \end{aligned}$$

Since the market price of share (expected value of dividend stream) is £20. Therefore, the discount rate is closer to 18% than it is to 19%, we can get the exact rate by interpolation by using the following formula:

$$K_e = \frac{r - (PV_s - PV_D)}{\Delta PV} \times \Delta r$$

Where,

$r =$ Either of two interest rates

$PV_s =$ Present value of share

$PV_D =$ Present value of dividend stream

$\Delta r =$ Difference in value of dividend stream

$\Delta PV =$ Difference in calculated present value of dividend stream.

$$\begin{aligned}
 K_e &= \frac{18\% - (\text{£} 20 - \text{£} 20.23)}{\text{£} 20.23 - \text{£} 17.89} \times 0.01 \\
 &= \frac{18\% - (-\text{Rs.} 0.23)}{\text{£} 2.34} \times 0.01 \\
 &= \frac{18\% + (\text{£} 0.23)}{\text{£} 2.34} \times 0.01 \\
 &= 18\% + 0.10\% \\
 &= 18.10\%
 \end{aligned}$$

Therefore, the firm's expected, or required, return on equity is 18.10%. At this rate the present discounted value of dividend stream is equal to the market price of the share.

21.

Rs. in lakhs

Net Profit	300
Less: Preference dividend	<u>120</u>

Earning for equity shareholders 180
 Therefore earning per share $180/30 = \text{Rs. } 6.00$
 Cost of capital i.e. (k_e)
 (Assumed) 16%

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

$$P = \frac{D}{K_e} + \frac{\frac{r(E-D)}{K_e}}{K_e}$$

Here Let Dividend (D) = 6x; E = Rs. 6; r = 0.20 and $K_e = 0.16$ and P = Rs. 42

$$\text{Hence Rs. } 42 = \frac{6x}{0.16} + \frac{0.2(6-6x)}{0.16 \times 0.16}$$

$$\begin{aligned} \text{or Rs. } 42 &= 37.50X + 46.875(1-x) \\ &= 9.375x = 4.875 \\ x &= 0.52 \end{aligned}$$

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

Note: Students can also presume any rate other than 16%.

22. Working Notes:

(1)	Cash Outflow (Initial)	(Figures in Million)
	Cost of Plant & Machinery	\$40
	Working Capital Requirement	\$4
		<u>\$44</u>
	Cash outflow in Rs. (Millions)	2112
		(Figure in Million \$)
(2)	Annual Cash Inflow	
	Sales Revenue (5 Million X \$10)	50.00
	Less: Costs	
	Variable Cost (5 Million units × \$2.5)	\$12.5
	Fixed Cost	\$3
	Depreciation (\$40 Million/ 5year)	<u>\$8</u> 23.50
	Earning before tax	26.50
	Less: Taxes (40%)	<u>10.60</u>
	Earning after tax	15.90

	Add: Back Depreciation	8.00
		<u>23.90</u>
(3)	Terminal year Cash Flows	
	Release of Working Capital	\$4 Million
	Salvage Value	<u>Nil</u>
		<u>\$4 Million</u>

Calculation of exchange Rate over a period of 5 years.

	Year		Rate Expected
(4)	0	=	48.00
	1	$48 \times \frac{103}{100} =$	49.44
	2	$49.44 \times \frac{103}{100} =$	50.9232
	3	$50.9232 \times \frac{103}{100} =$	52.4509
	4	$52.4509 \times \frac{103}{100} =$	54.0244
	5.	$54.0244 \times \frac{103}{100} =$	55.6451

(5) Calculation of Repatriable/Accessible Funds

Period	Particulars		Millions\$
1-4 years	Operating Cash Flow After Tax	23.90	
	Less: Retention	7.17	
	Repatriable amount	16.73	
	Less: Withholding Tax	1.673	
	Accessible Funds		15.057
5 year	Operating Cash Flow After Tax	23.90	
	Less: Withholding Tax	2.39	

	21.51
Add: Repatriation of Blocked Funds*	27.40
Accessible Funds	48.91
*Future Value of Blocked Funds of \$7.17 Million shall be computed as follows:	
Value of Funds blocked from year 1-4	7.17 M\$
PV AF (4%, 4)	4.246
Value of Funds at end	30.4438
	M\$
Withholding Tax	3.0444 M\$
	27.3994
	M\$

Statement Showing Net Present Value of the Project

Period	Particulars	Cash Flow		PVF @12 %	PV
		US\$	Exchange Rate	Rs.	
0	Initial Outflow	44	48	(2112)	1 (2112)
1	Annual Cash Flow	15.057	49.44	744.42	0.893 664.77
2	"	15.057	50.9232	766.75	0.797 611.10
3	"	15.057	52.4509	789.75	0.712 562.30
4	"	15.057	54.0244	813.45	0.636 517.35
5	"	48.91	55.6451	2721.60	0.567 1543.15
6	Release of WC	4.00	55.6451	222.58	0.567 126.20
					1912.87

Decision: Since NPV of the project is positive, the Indian Company should go for its decision of subsidiary in US.

23. (1)

	(Rs. 000)	
	2008 Expenses	2007 Expenses
Raw material		
Opening inventory	320	250

Add: Purchases	<u>500</u>		<u>400</u>	
	820		650	
Less: Closing inventory based on LIFO*	<u>330</u>	490	<u>320</u>	330
Labour		200		174
Depreciation		<u>165*</u>		<u>150</u>
Cost of goods sold		855		654
Add: Administration expenses		<u>100</u>		<u>92</u>
		<u>955</u>		<u>746</u>

*considered on replacement cost basis.

$$\text{Hence, weighted average inflation factor for the firm in 2008} = \frac{955}{746}$$

$$= 1.28 \text{ i.e. } 28\% \text{ over } 2007$$

- (2) If the firm desires a 15 per cent profit margin on sales the price which the firm should charge for the product per unit can be identified in two ways:-

- (i) In 2007, EBIT as a percentage of sales was 17.1%.

Hence, if we take the weighted average inflation in 2008 over 2007 and increase prices to that extent the charge per product in 2008 will be

$$\text{Rs. } \frac{9,00,000}{980} \times 1.28 = 1,175.50$$

or in other words

$$\text{Average price in 2007} \times (1 + \text{inflation \%})$$

$$= \text{Rs. } 918.36 \times 1.28 = \text{Rs. } 1,175.50 \text{ per product}$$

i.e. Total sales will be (Rs. 1,175.50 × 980 Nos.) = Rs. 11,52,000 approximately

Alternatively,

- (ii) Total cost in 2008, for 980 Nos. is Rs. 9,55,000.

Hence, for each No. = Rs. 974.50.

In order to earn 15% profit margin on sales (EBIT level), the sales price per product will be

$$\text{Rs. } \frac{974.50}{0.85} = \text{Rs. } 1,146.50$$

Total sales will be (Rs. 1,146.50 × 980 Nos.) = Rs. 11,23,570

Note: Figures have been rounded off.

24. Investors' rights and obligations under the Mutual Fund Regulations:

Important aspect of the mutual fund regulations and operations is the investors' protection and disclosure norms. It serves the very purpose of mutual fund guidelines. Due to these norms it is very necessary for the investor to remain vigilant. Investor should continuously evaluate the performance of mutual fund.

Following are the steps taken for improvement and compliance of standards of mutual fund:

1. All mutual funds should disclose full portfolio of their schemes in the annual report within one month of the close of each financial year. Mutual fund should either send it to each unit holder or publish it by way of an advertisement in one English daily and one in regional language.
2. The Asset Management Company must prepare a compliance manual and design internal audit systems including audit systems before the launch of any schemes. The trustees are also required to constitute an audit committee of the trustees which will review the internal audit systems and the recommendation of the internal and statutory audit reports and ensure their rectification.
3. The AMC shall constitute an in-house valuation committee consisting of senior executives including personnel from accounts, fund management and compliance departments. The committee would on a regular basis review the system practice of valuation of securities.
4. The trustees shall review all transactions of the mutual fund with the associates on a regular basis.

Investors' Rights:

1. Unit holder have proportionate right in the beneficial ownership of the schemes assets as well as any dividend or income declared under the scheme.
2. Receive dividend warrant within 42 days.
3. AMC can be terminated by 75% of the unit holders.
4. Right to inspect major documents i.e. material contracts, Memorandum of Association and Articles of Association (M.A. & A.A) of the AMC, Offer document etc.
5. 75% of the unit holders have the right to approve any changes in the close ended scheme.
6. Every unit holder have right to receive copy of the annual statement.

Legal limitations to investors' rights:

1. Unit holders cannot sue the trust but they can initiate proceedings against the trustees, if they feel that they are being cheated.
2. Except in certain circumstances AMC cannot assure a specified level of return to the investors. AMC cannot be sued to make good any shortfall in such schemes.

Investors' Obligations:

1. An investor should carefully study the risk factors and other information provided in the offer document. Failure to study will not entitle him for any rights thereafter.
 2. It is the responsibility of the investor to monitor his schemes by studying the reports and other financial statements of the funds.
25. (a) Distinction between Event-Described or Activity-Described Network

Often, a network is described by stating the events, i.e., the start and finish of activities. Usually, the PERT network is described by events, because activities consuming time are considered uncertain and a probabilistic approach is resorted to. In the so-called CPM network, activities between two nodes, i.e., the arc elements, are stated. Here, the nodes are dependent on the deterministic assessment of activities.

However, this distinction based on describing the procedure either through nodes or by activities is fast disappearing and both PERT and CPM can be described interchangeably by either of the above methods. But it is important that a consistent convention is adhered to throughout the network logic.

(b) Distinction between primary and secondary markets

- (1) Nature of Securities: The primary markets deals with new securities, that is, securities, which were not previously available and are, therefore, offered to the investing public for the first time. The market, therefore, derives its name from the fact that it makes available a new block of securities for public subscription. The stock market, on the other hand, is a market for old securities, which may be defined as securities, which have been issued already and granted stock exchange quotation. The stock exchanges, therefore, provide a regular and continuous market for buying and selling of securities.
- (2) Nature of Financing: Another aspect related to the separate functions of these two parts of the securities market is the nature of their contribution to industrial financing. Since the primary market is concerned with new securities, it provides additional funds to the issuing companies either for starting a new enterprise or for the expansion or diversification of the existing one and, therefore, its contribution to company financing is direct. In contrast, the secondary markets can in no circumstance supply additional funds since the company is not involved in the transaction. This, however, does not mean that the stock markets do not have relevance in the process of transfer of resources from savers to investors. Their role regarding the supply of capital is indirect. The usual course in the development of industrial enterprise seems to be that those who bear the initial burden of financing a new enterprise pass it on to others when the enterprise becomes well established. The existence of secondary markets which provide institutional facilities for the continuous purchase and sale of securities and, to that extent, lend liquidity and

marketability, play an important part in the process.

- (3) **Organisational Differences:** The stock exchanges have physical existence and are located in a particular geographical area. The primary market is not rooted in any particular spot and has no geographical existence. The primary market has neither any tangible form any administrative organizational setup like that of stock exchanges, nor is it subjected to any centralized control and administration for the consummation of its business. It is recognized only by the services that it renders to the lenders and borrowers of capital funds at the time of any particular operation.

(c) **Distinction between Caps & floors vs. Swaptions**

For caps/floors, the relevant stochastic variable is the implied forward rate for each time bucket. Comparatively, the underlying stochastic variable for swaptions would be the forward-starting swap. It is also important to note that a swaption will actually only has one date of exercise compared to a cap (which is essentially a series of separate call options on forward rates). Although the cash flow dates will be similar, each caplet in a cap should be treated independently. Once a swaption is exercised, all the cash flows on the underlying IRS of the swaption will occur. There is consequently quite a big difference between a 2-year cap on 3-month instrument (a total of 7 options) and a 3-month swaption on an 18-month forward-start IRS (only a single option). This difference is reflected in the fact that swaptions attract a lower premium.

Where swaptions are used to hedge a borrowing, it would appear at first glance that the cost of the premium of swaptions would cancel any benefit. This would be the case if the hedge were priced entirely off the forward curve, as is the case when caps are used. The volatility element in the cap premium is determined by taking into account the consideration of each time bucket. As pointed out, a swaption is however an option on a forward start IRS. The volatility curve is therefore drawn around the swap and not the forward curve. The swap curve will always be below the forward curve as long as the two curves are positive. This relationship results from the fact that the swap rate is the one fixed rate that causes the sum of the net present values of the fixed cash flows to equal the sum of the net present values of the floating flows.

Another difference between the instruments is the fact that once a swaption is exercised, the holder has entered into a swap. This swap will have been entered into at a favourable rate, but the holder can still lose money if the rates move against him. When a cap is exercised, the holder can never lose money.