

PAPER – 2 : STRATEGIC FINANCIAL MANAGEMENT

Question No.1 is compulsory.

Attempt any **five** out of the remaining **six** questions.

Wherever appropriate, suitable assumptions should be made and indicated in the answer by the candidate.

Working notes should form part of the answer.

Question 1

- (a) SBI mutual fund has a NAV of ₹ 8.50 at the beginning of the year. At the end of the year NAV increases to ₹ 9.10. Meanwhile fund distributes ₹ 0.90 as dividend and ₹ 0.75 as capital gains.
- (i) What is the fund's return during the year?
- (ii) Had these distributions been re-invested at an average NAV of ₹ 8.75 assuming 200 units were purchased originally. What is the return? **(5 Marks)**
- (b) A call option on gold with exercise price ₹ 26,000 per ten gram and three months to expire is being traded at a premium of ₹ 1,010 per ten gram. It is expected that in three months time the spot price might change to ₹ 27,300 or 24,700 per ten gram. At present this option is at-the-money and the rate of interest with simple compounding is 12% per annum. Is the current premium for the option justified? Evaluate the option and comments. **(5 Marks)**
- (c) If the present interest rate for 6 months borrowings in India is 9% per annum and the corresponding rate in USA is 2% per annum, and the US\$ is selling in India at ₹ 64.50/\$.
- Then :
- (i) Will US \$ be at a premium or at a discount in the Indian forward market?
- (ii) Find out the expected 6 month forward rate for US\$ in India.
- (iii) Find out the rate of forward premium/discount. **(5 Marks)**
- (d) The rate of inflation in USA is likely to be 3% per annum and in India it is likely to be 6.5%. The current spot rate of US \$ in India is ₹ 43.40. Find the expected rate of US\$ in India after one year and 3 years from now using purchasing power parity theory. **(5 Marks)**

Answer

- (a) Return for the year (all changes on a per year basis)

Particulars	₹ /Unit
Change in price (₹ 9.10 – ₹ 8.50)	0.60

Dividend received	0.90
Capital gain distribution	<u>0.75</u>
Total Return	<u>2.25</u>

$$\text{Return on investment} = \frac{2.25}{8.50} \times 100 = 26.47\%$$

If all dividends and capital gain are reinvested into additional units at ₹ 8.75 per unit the position would be.

$$\text{Total amount reinvested} = ₹ 1.65 \times 200 = ₹ 330$$

$$\text{Additional units added} = \frac{₹ 330}{8.75} = 37.71 \text{ units}$$

$$\text{Value of 237.71 units at end of year} = ₹ 2,163.16$$

$$\text{Price paid for 200 units in beginning of the year} (200 \times ₹ 8.50) = ₹ 1,700$$

$$\text{Return} = \frac{₹ 2,163.16 - ₹ 1,700}{₹ 1,700} = \frac{₹ 463.16}{₹ 1,700} = 27.24\%$$

- (b) To determine whether premium is justified we shall compute the value of option by using any of the following models:

By use of Binomial Model

Decision Tree showing pay off

Year 0	3 months	Pay off
26000	27300	1300
	24700	0

The Delta (Δ) Ratio

$$\Delta = \frac{1300 - 0}{27300 - 24700} = 0.50$$

Replicating portfolio Buy 5 gram of gold and sell one call option.

$$\text{The pay off if price goes up} = 0.50 \times ₹ 27300 - ₹ 1,300 = ₹ 12,350$$

$$\text{The pay off if price goes down} = 0.50 \times ₹ 24,700 = ₹ 12,350$$

$$\text{Present Value of Pay-off} = \frac{₹ 12,350}{1.03} = ₹ 11,990$$

$$\text{Current Investment} = ₹ 26,000 \times 0.50 = ₹ 13,000$$

$$\text{Value of Option} = ₹ 13,000 - ₹ 11,990 = ₹ 1,010$$

Thus the price of option is justified.

Alternatively, by using Risk Neutral Model:

First of all we shall calculate probability of high demand (P) using risk neutral method as follows:

$$3\% = p \times 5\% + (1-p) \times (-5\%)$$

$$0.03 = 0.05p - 0.05 + 0.05p$$

$$p = \frac{0.08}{0.10} = 0.80$$

$$\text{The value of Call Option} = \frac{1300 \times 0.8 + 0 \times 0.2}{1.03} = ₹ 1,009.71 \text{ say } ₹ 1,010$$

Thus, the price of option is justified.

- (c) (i) Under the given circumstances, the USD is expected to quote at a premium in India as the interest rate is higher in India.

- (ii) Calculation of the forward rate:

$$\frac{1+R_h}{1+R_f} = \frac{F_1}{E_0}$$

Where: R_h is home currency interest rate, R_f is foreign currency interest rate, F_1 is end of the period forward rate, and E_0 is the spot rate.

$$\text{Therefore } \frac{1+(0.09/2)}{1+(0.02/2)} = \frac{1+(0.09/2)}{1+(0.02/2)} = \frac{F_1}{64.50}$$

$$\frac{1+0.045}{1+0.01} = \frac{F_1}{64.50}$$

$$\text{or } \frac{1.045}{1.01} \times 64.50 = F_1$$

$$\text{or } \frac{67.4025}{1.01} = F_1$$

$$\text{or } F_1 = ₹66.74$$

- (iii) Rate of premium:

$$\frac{66.74 - 64.50}{64.50} \times \frac{12}{6} \times 100 = 6.94\%$$

- (d) The differential inflation is 3.5%. Hence the rate will keep changing adversely by 3.5% every year. Assuming that the change is reflected at the end of each year, the rates will be:

End of Year		₹/USD
1	₹ 43.40 x 1.035	44.92
2	₹ 44.92 x 1.035	46.49
3	₹ 46.49 x 1.035	48.12

Alternative Answer

End of Year	₹	₹ /USD
1	$₹ 43.40 \times \left(\frac{(1+0.065)}{(1+0.03)} \right)$	44.87
2	$₹ 44.87 \times \left(\frac{(1+0.065)}{(1+0.03)} \right)$	46.39
3	$₹ 46.39 \times \left(\frac{(1+0.065)}{(1+0.03)} \right)$	47.97

Question 2

- (a) ABC Computers Ltd. is desiring to install a “Software Developing Unit” costing ₹ 60 lacs. In order to leverage its tax position, it has requested the vendor to quote for a three year lease with rentals payable at the end of each year but in a diminishing manner such that they are in the ratio of 3:2:1. Depreciation can be assumed to be on WDV basis @25% and the vendor’s marginal tax rate is 35%. The target rate of return for the vendor is 10%. You are required to find out the year wise rental the vendor is required to quote to ABC Computer Limited. **(8 Marks)**
- (b) Indian Newsprint Ltd. (INL) a leading manufacturer of newsprint in the country, is planning to start manufacturing card board unit. Planning & Strategy division of the company has placed before the board of directors the “Dental Project Repot” of the card board unit. The report inter alia, includes the following cash flow:

(Fig. in ₹ lacks)

Year	Cost of the plant	Recurring cost	Savings
0	1000		
1		400	1200
2		500	1400

The cost of the capital is 9%.

You are required to measure the sensitivity of the project to changes in the levels of plant value, recurring cost and savings (considering each factor at a time) such that the NPV becomes zero. The present value factor at 9% are given below:

Year	PVF 9%
0	1
1	0.917
2	0.842

Advise the board of directors which factor is the most sensitive to affect the acceptability of the project? **(8 Marks)**

Answer

(a) Calculation of depreciation tax shield (₹ Lakhs)

Year	Cost / WDV	Dep. @ 25 %	Tax shield @ 0.35	PVF	PV of dep. tax shield
1	60.00	15.00	5.25	0.909	4.772
2	45.00	11.25	3.938	0.826	3.253
3	33.75	8.438	2.953	0.751	<u>2.217</u>
					<u>10.242</u>

Capital sum to be placed on lease (₹ Lakhs)

Cash down price 60.00

Less: PV of depreciation tax shield 10.242

To be placed on lease **49.758**

Let the normal annual lease rent were to be "x" then

Year	Post tax	PVF	PV of cash flow
1	3 x (1-0.35) or 1.95 x	0.909	1.773 x
2	2x (1-0.35) or 1.30x	0.826	1.074x
3	1x (1-0.35) or 0.65x	0.751	<u>0.488x</u>
			<u>3.335 x</u>

Value of x = ₹ 49.758 lakhs / 3.335 i.e.

₹ 14.92 lakhs

Year wise lease rental will be

₹ lakhs		
Year 1	3 × 14.92	44.76
Year 2	2 × 14.92	29.84
Year 3	1 × 14.92	14.92

(b) P.V. of Cash Flows

			₹ Lacs
Year 1	Running Cost	400 x 0.917	= (366.80)
	Savings	1,200 x 0.917	= 1100.40
Year 2	Running Cost	500 x 0.842	= (421.00)
	Savings	1,400 x 0.842	= 1178.80
			<u>1491.40</u>
Year 0	Less: P.V. of Cash Outflow	1,000 x 1	<u>1,000.00</u>
	NPV		<u>491.40</u>

Sensitivity Analysis

- (i) Increase of Plant Value by ₹ 491.40 lacs

$$\therefore \frac{491.40}{1000} \times 100 = 49.14\%$$

- (ii) Increase of Running Cost by ₹ 491.40 lacs

$$\frac{491.40}{366.80 + 421} = \frac{491.40}{787.80} \times 100 = 62.38\%$$

- (iii) Fall in Saving by ₹ 491.40 lacs

$$\frac{491.40}{1100.40 + 1178.80} = \frac{491.40}{2279.20} \times 100 = 21.56\%$$

Hence, savings factor is the most sensitive to affect the acceptability of the project as in comparison of other two factors as a slight % change in this factor shall more affect the NPV than others.

OR**Sensitivity Analysis**

- (i) If the initial project cost is varied adversely by say 10%*.

NPV (Revised) (₹ 491.40 lacs – ₹ 100.00 lacs) = ₹ 391.40 lacs

$$\text{Change in NPV} \frac{491.40 - 391.40}{491.40} = 20.35\%$$

- (ii) If Annual Running Cost is varied by say 10%*.

NPV (Revised) (₹ 491.40 – ₹ 40 X 0.917 – ₹ 50 X 0.843)

= ₹ 491.40 lacs – ₹ 36.68 lacs – ₹ 42.15 lacs = ₹ 412.57 lacs

$$\text{Change in NPV} = \frac{491.40 - 412.60}{491.40} = 16.04\%$$

- (iii) If Saving is varied by say 10%*.

$$\begin{aligned} \text{NPV (Revised)} &= (\text{₹ } 491.40 \text{ lacs} - \text{₹ } 120 \text{ lacs} \times 0.917 - \text{₹ } 140 \text{ lacs} \times 0.843) \\ &= \text{₹ } 491.40 \text{ lacs} - \text{₹ } 110.04 \text{ lacs} - \text{₹ } 118.02 \text{ lacs} = \text{₹ } 263.34 \text{ lacs} \end{aligned}$$

$$\text{Change in NPV} = \frac{491.40 - 263.34}{491.40} = 46.41\%$$

Hence, savings factor is the most sensitive to affect the acceptability of the project.

* Any percentage of variation other than 10% can also be assumed by candidates.

Question 3

- (a) *Bharat Bank Ltd. has entered into a plain vanilla swap through on Overnight Index Swap (OIS) on a principal of ₹ 1 crore and agreed to receive MIBOR overnight floating rate for a fixed payment on the principal. The swap was entered into on Monday, 10th July 2017 and was to commence on and from 11th July 2017 and run for a period of 7 days.*

Respective MIBOR rates for Tuesday to Monday were:

8.75%, 9.15%, 9.12%, 8.95%, 8.98% and 9.15%.

If Bharat Bank Ltd. received ₹ 417 net on settlement, calculate fixed rate and interest under both legs.

Notes:

- (i) Sunday is a holiday*
- (ii) Work in rounded rupee and avoid decimal working*
- (iii) Consider 365 days in a year.*

(8 Marks)

- (b) *A reputed financial institution of the country floated a Mutual fund having a corpus of ₹ 10 crores consisting of 1 crore units of ₹ 10 each. Mr. Vijay invested ₹ 10,000 for 1000 units of ₹ 10 each on 1st July 2014. For the financial year ended 31st March 2015, the fund declared a dividend of 10% and Mr. Vijay found that his annualized yield from the fund was 153.33%. The mutual fund during the financial year ended 31st March 2016, declared a dividend of 20%. Mr. Vijay has reinvested the entire dividend in acquiring units of this mutual fund at its appropriate NAV. On 31st March 2017 Mr. Vijay redeemed all his balances of 1129.61 units when his annualized yield was 73.52%.*

You are required to find out NAV as on 31st March 2015, 31st March 2016 and 31st March 2017.

(8 Marks)

Answer**(a)**

Day	Principal (₹)	MIBOR (%)	Interest (₹)
Tuesday	1,00,00,000	8.75	2,397
Wednesday	1,00,02,397	9.15	2,507
Thursday	1,00,04,904	9.12	2,500
Friday	1,00,07,404	8.95	2,454
Saturday & Sunday (*)	1,00,09,858	8.98	4,925
Monday	1,00,14,783	9.15	<u>2,511</u>
Total Interest @ Floating			17,294
Less: Net Received			<u>417</u>
Expected Interest @ fixed			<u>16,877**</u>
Thus Fixed Rate of Interest			0.0880015
Approx.			8.80%

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

(**) $1 \text{ crore} \times 'X'/100 \times 7/365 = 16,877$

$$\text{Hence, } X = \frac{16877 \times 365 \times 100}{1 \text{ cr.} \times 7}$$

$$= 8.8\%$$

(b) Yield for 9 months = (153.33 x 9/12) = 115%

$$\begin{aligned} \text{Market value of Investments as on 31.03.2015} &= 10,000/- + (10,000 \times 115\%) \\ &= ₹ 21,500/- \end{aligned}$$

$$\text{Therefore, NAV as on 31.03.2015} = (21,500 - 1,000)/1,000 = ₹ 20.50$$

$$\begin{aligned} \text{(NAV would stand reduced to the extent of dividend payout, being } (1,000 \times 10 \times 10\%) \\ = ₹ 1,000) \end{aligned}$$

$$\text{Since dividend was reinvested by Mr. X, additional units acquired} = \frac{₹ 1,000}{₹ 20.50} = 48.78 \text{ units}$$

$$\text{Therefore, units as on 31.03.2015} = 1,000 + 48.78 = 1048.78$$

$$[\text{Alternately, units as on 31.03.2015} = (21,500/20.50) = 1048.78]$$

$$\text{Dividend as on 31.03.2016} = 1048.78 \times 10 \times 0.2 = ₹ 2,097.56$$

Let X be the NAV on 31.03.2016, then number of new units reinvested will be ₹ 2097.56/X. Accordingly 1129.61 units shall consist of reinvested units and 1048.78 (as on 31.03.2015). Thus, by way of equation it can be shown as follows:

$$1129.61 = \frac{2097.56}{X} + 1048.78$$

Therefore, NAV as on 31.03.2016 = $2097.56 / (1,129.61 - 1,048.78)$ = ₹25.95

NAV as on 31.03.2017 = ₹ 10,000 $(1 + 0.7352 \times 33/12) / 1129.61$ = ₹ 26.75

Question 4

- (a) A textile manufacturer has taken floating interest rate loan of ₹ 40,00,000 on 1st April, 2012. The rate of interest at the inception of loan is 8.5% p.a. interest is to be paid every year on 31st March, and the duration of loan is four years. In the month of October 2012, the Central bank of the country releases following projections about the interest rates likely to prevail in future.
- (i) On 31st March, 2013, at 8.75%; on 31st March, 2014 at 10% on 31st March, 2015 at 10.5% and on 31st March, 2016 at 7.75%. Show how this borrowing can hedge the risk arising out of expected rise in the rate of interest when he wants to peg his interest cost at 8.50% p.a.
- (ii) Assume that the premium negotiated by both the parties is 0.75% to be paid on 1st October, 2012 and the actual rate of interest on the respective due dates happens to be as: on 31st March, 2013 at 10.2%; on 31st March, 2014 at 11.5%; on 31st March, 2015 at 9.25%; on 31st March, 2016 at 9.0% and 8.25%. Show how the settlement will be executed on the perspective interest due dates. **(8 Marks)**
- (b) East Co. Ltd. is studying the possible acquisition of Fost Co. Ltd. by way of merger. The following data are available in respect of the companies.

	East Co. Ltd.	Fost Co. Ltd.
Earnings after tax (₹)	2,00,000	60,000
No. of equity shares	40,000	10,000
Market value per share (₹)	15	12

- (i) If the merger goes through by change of equity share and the exchange ratio is based on the current market price, what are the new earnings per share for East Co. Ltd.?
- (ii) Fort Co. Ltd. wants to be sure that the merger will not diminish the earnings available to its shareholders. What should be the exchange ratio in that case?

(8 Marks)

Answer

(a) As borrower does not want to pay more than 8.5% p.a., on this loan where the rate of interest is likely to rise beyond this, hence, he has hedge the risk by entering into an agreement to buy interest rate caps with the following parameters:

- National Principal : ₹ 40,00,000/-
- Strike rate: 8.5% p.a.
- Reference rate : the rate of interest applicable to this loan
- Calculation and settlement date : 31st March every year
- Duration of the caps : till 31st March 2016
- Premium for caps : negotiable between both the parties

To purchase the caps this borrower is required to pay the premium upfront at the time of buying caps. The payment of such premium will entitle him with right to receive the compensation from the seller of the caps as soon as the rate of interest on this loan rises above 8.5%. The compensation will be at the rate of the difference between the rate of none of the cases the cost of this loan will rise above 8.5% calculated on ₹ 40,00,000/-. This implies that in none of the cases the cost of this loan will rise above 8.5%. This hedging benefit is received at the respective interest due dates at the cost of premium to be paid only once.

The premium to be paid on 1st October 2012 is **30,000/-** ($₹ 40,00,000 \times 0.75/100$). The payment of this premium will entitle the buyer of the caps to receive the compensation from the seller of the caps whereas the buyer will not have obligation. The compensation received by the buyer of caps will be as follows:

On 31st March 2013

The buyer of the caps will receive the compensation at the rate of 1.70% (10.20 - 8.50) to be calculated on ₹ 40,00,000, the amount of compensation will be ₹ 68000/- ($40,00,000 \times 1.70/100$)

On 31st March 2014

The buyer of the caps will receive the compensation at the rate of 3.00% (11.50 – 8.50) to be calculated on ₹ 40,00,000/-, the amount of compensation will be ₹ 120000/- ($40,00,000 \times 3.00/100$).

On 31st March 2015

The buyer of the caps will receive the compensation at the rate of 0.75% (9.25 – 8.50) to be calculated on ₹ 40,00,000/-, the amount of compensation will be ₹ 30,000 ($40,00,000 \times 0.75/100$).

On 31st March 2016

The buyer of the caps will not receive the compensation as the actual rate of interest is 8.25% whereas strike rate of caps is 8.5%. Hence, his interest liability shall not exceed 8.50%.

Thus, by paying the premium upfront buyer of the caps gets the compensation on the respective interest due dates without any obligations.

(b) (i) Calculation of new EPS of East Co. Ltd.

No. of equity shares to be issued by East Co. Ltd. to Fost Co. Ltd.

$$= 10,000 \text{ shares} \times ₹ 12/₹ 15 = 8,000 \text{ shares}$$

Total no. of shares in East Co. Ltd. after acquisition of Fost Co. Ltd.

$$= 40,000 + 8,000 = 48,000$$

Total earnings after tax [after acquisition]

$$= 2,00,000 + 60,000 = 2,60,000$$

$$\text{EPS} = \frac{₹ 2,60,000}{48,000 \text{ equity shares}} = ₹ 5.42$$

(ii) Calculation of exchange ratio which would not diminish the EPS of Fost Co. Ltd. after its merger with East Co. Ltd.

Current EPS:

$$\text{East Co. Ltd.} = \frac{₹ 2,00,000}{40,000 \text{ equity shares}} = ₹ 5$$

$$\text{Fost Co. Ltd.} = \frac{₹ 60,000}{10,000 \text{ equity shares}} = ₹ 6$$

$$\text{Exchange ratio} = 6/5 = 1.20$$

Cross Tally

No. of new shares to be issued by East Co. Ltd. to Fost Co. Ltd.

$$= 10,000 \times 1.20 = 12,000 \text{ shares}$$

Total number of shares of East Co. Ltd. after acquisition

$$= 40,000 + 12,000 = 52,000 \text{ shares}$$

$$\text{EPS [after merger]} = \frac{₹ 2,60,000}{52,000 \text{ shares}} = ₹ 5$$

Total earnings in East Co. Ltd. available to new shareholders of Fost Co. Ltd.

$$= 12,000 \times ₹ 5 = ₹ 60,000$$

Recommendation: The exchange ratio (6 for 5) based on market shares is beneficial to shareholders of 'Fost' Co. Ltd.

Question 5

- (a) JKL Ltd. is an export business house. The company prepares invoice in customers' currency.

Its debtors of US \$. 20,000,000 is due on April 1, 2017.

Market information as at January 1, 2017 is:

Exchange rates US\$/INR		Currency Futures US \$/INR	
Spot	0.016667	Contract size: 31,021,218	
1- month forward	0.016529	1- month	0.016519
3- month forward	0.016129	3- month	0.016118

	Initial Margin	Interest rates in India
1- month	₹ 32,500	7%
3- month	₹ 50,000	8%

On April 1, 2017 the spot rate US\$/INR is 0.016136 and currency future rate is 0.016134.

Which of the following methods would be most advantageous to JKL Ltd.?

- (i) Using forward contract
- (ii) Using currency futures
- (iii) Not hedging the currency risk

(8 Marks)

- (b) Rahim Enterprises is a manufacturer and exporter of woolen garments to European countries. Their business is expanding day by day and in the previous financial year the company has registered a 25% growth in export business. The company is in the process of considering a new investment project. It is an all equity financed company with 10,00,000 equity shares of face value of ₹ 50 per share. The current issue price of this share is ₹ 125 ex-divided. Annual earning are ₹ 25 per share and in the absence of new investments will remain constant in perpetuity. All earnings are distributed at present. A new investment is available which will cost ₹ 1,75,00,000 in one year's time and will produce annual cash inflows thereafter of ₹ 50,00,000. Analyse the effect of the new project on dividend payments and the share price.

(8 Marks)

Answer

(a)

	₹
Receipts using a forward contract (20,000,000/0.016129)	1,24,00,02,480
Receipts using currency futures	
The number of contracts needed is (20,000,000/0.016118)/31,021,218 = 40	
Initial margin payable is 40 x ₹ 50,000 = ₹ 20,00,000	
On April 1 Close at 0.016136	
Receipts = US\$20,000,000/0.016136	1,23,94,64,551
Variation Margin = [(0.016134 - 0.016118) x 40 x 31,021,218]/0.016136	
OR (0.000016x40x31021218)/.016136 = 755.2/0.016136	<u>12,30,390</u>
	1,24,06,94,941
Less: Interest Cost – 20,00,000 x 0.08 x 3/12	<u>40,000</u>
Net Receipts	<u>1,24,06,54,941</u>
Receipts under different methods of hedging	
Forward contract	1,24,00,02,480
Futures	1,24,06,54,941
No hedge	
US\$ 20,000,000/0.016136	1,23,94,64,551
The most advantageous option would have been to hedge with Future.	

(b) (i) Let us first compute the Cost of Equity $k_e = \frac{D}{P} = \frac{25}{125} = 20\%$

(ii) Current Earning = ₹ 25 x 10,00,000 = ₹ 2,50,00,000

The new project can be financed by retaining ₹ 1,75,00,000 of ₹ 2,50,00,000 earning next year, reducing dividend payment to ₹ 75,00,000 or

$$\frac{₹ 75,00,000}{10,00,000} = ₹ 7.50 \text{ per share}$$

- (iii) In the following years, dividend will increase due to the cash generated by the new project. Dividend per share in year 2 shall be:

$$\frac{₹ 2,50,00,000 + ₹ 50,00,000}{10,00,000} = ₹ 30 \text{ per share}$$

- (iv) The new share price can be calculated by finding the Present Value of the revised dividend payments:

$$P = \frac{₹ 7.50}{1.20} + \frac{₹ 30.00}{0.20} \times \frac{1}{1.20} = ₹ 131.25 \text{ per share}$$

Question 6

- (a) The return of security 'L' and security 'K' for the past five years are given below:

Year	Security-L Return %	Security-K Return %
2012	10	11
2013	04	- 06
2014	05	13
2015	11	08
2016	15	14

Calculate the risk and return of portfolio consisting above information. **(10 Marks)**

- (b) Sea Rock Ltd. has an excess cash of ₹ 30,00,000 which it wants to invest in short-term marketable securities.
- (i) Expenses resulting to investment will be ₹ 45,000. The securities invested will have an annual yield of 10%. The company seeks your advice as to the period of investment so as to earn a pre-tax income of 6%.
- (ii) Also find the minimum period for the company to break-even its investment expenditure. Ignore time value of money **(6 Marks)**

Answer

- (a) If it is assumed 50% investment in each of the two securities then Return and Risk of Portfolio shall be computed as follows:

Year	Return of L	Deviation ($R_L - \bar{R}_L$)	Deviation ($R_L - \bar{R}_L$) ²	Return of K	Deviation ($R_K - \bar{R}_K$)	Deviation ($R_K - \bar{R}_K$) ²	Product of deviations
2012	10	1	1	11	3	9	3
2013	04	-5	25	-6	-14	196	70

2014	05	-4	16	13	5	25	-20
2015	11	2	4	8	0	0	0
2016	15	6	36	14	6	36	36
	$\Sigma = 45$		$\Sigma = 82$	$\Sigma = 40$		$\Sigma = 266$	
$\bar{R}_L = \frac{45}{5} = 9$		$\bar{R}_K = \frac{40}{5} = 8$				89	

$$\text{Covariance} = \frac{\sum_{i=1}^N [R_1 - \bar{R}_1][R_2 - \bar{R}_2]}{N} = 89/5 = 17.8$$

Return and Standard Deviation of Security L

$$R_L = \frac{45}{5} = 9$$

$$\sigma_L = \sqrt{\frac{(R_{L_i} - \bar{R}_L)^2}{N}}$$

$$\sigma_L = \sqrt{\frac{82}{5}} = 4.05$$

Standard Deviation of Security K

$$\sigma_K = \sqrt{\frac{(R_{K_i} - \bar{R}_K)^2}{N}}$$

$$\sigma_K = \sqrt{\frac{266}{5}} = 7.29$$

Portfolio Return

$$R_P = 0.50 \times 9 + 0.50 \times 8 = 8.50\%$$

Portfolio Standard Deviation

$$\sigma_{LK} = (0.50^2 \times 4.05^2 + 0.50^2 \times 7.29^2 + 2 \times 0.5 \times 0.5 \times 17.8)^{\frac{1}{2}} = 5.12$$

- (b) (i) Pre-tax Income required on investment of ₹ 30,00,000 is ₹ 1,80,000.

Let the period of Investment be 'P' and return required on investment ₹ 1,80,000
(₹ 30,00,000 x 6%)

Accordingly,

$$(\text{₹ } 30,00,000 \times \frac{10}{100} \times \frac{P}{12}) - \text{₹ } 45,000 = \text{₹ } 1,80,000$$

$$P = 9 \text{ months}$$

(ii) Break-Even its investment expenditure

$$(\text{₹ } 30,00,000 \times \frac{10}{100} \times \frac{P}{12}) - \text{₹ } 45,000 = 0$$

$$P = 1.80 \text{ months}$$

Question 7

Write short notes on any **FOUR** of the following:

- Various processes of strategic decision making
- Financial restructuring
- Chop Shop method of valuation
- What are P-notes? Why it is preferable route for foreigners to invest in India?
- Differentiate between 'Off-share funds' and 'Asset Management Mutual Funds'.

(4 x 4 = 16 Marks)

Answer

- (a) Capital investment is the springboard for wealth creation. In a world of economic uncertainty, the investors want to maximize their wealth by selecting optimum investment and financial opportunities that will give them maximum expected returns at minimum risk. Since management is ultimately responsible to the investors, the objective of corporate financial management should implement investment and financing decisions which should satisfy the shareholders by placing them all in an equal, optimum financial position. The satisfaction of the interests of the shareholders should be perceived as a means to an end, namely maximization of shareholders' wealth. Since capital is the limiting factor, the problem that the management will face is the strategic allocation of limited funds between alternative uses in such a manner, that the companies have the ability to sustain or increase investor returns through a continual search for investment opportunities that generate funds for their business and are more favourable for the investors. Therefore, all businesses need to have the following three fundamental essential elements:
- A clear and realistic strategy,
 - The financial resources, controls and systems to see it through and
 - The right management team and processes to make it happen.

- (b) Financial restructuring, is carried out internally in the firm with the consent of its various stakeholders. Financial restructuring is a suitable mode of restructuring of corporate firms that have incurred accumulated sizable losses for / over a number of years. As a sequel, the share capital of such firms, in many cases, gets substantially eroded / lost; in fact, in some cases, accumulated losses over the years may be more than share capital, causing negative net worth. Given such a dismal state of financial affairs, a vast majority of such firms are likely to have a dubious potential for liquidation. Can some of these Firms be revived? Financial restructuring is one such a measure for the revival of only those firms that hold promise/prospects for better financial performance in the years to come. To achieve the desired objective, 'such firms warrant / merit a restart with a fresh balance sheet, which does not contain past accumulated losses and fictitious assets and shows share capital at its real/true worth.
- (c) This approach attempts to identify multi-industry companies that are undervalued and would have more value if separated from each other. In other words as per this approach an attempt is made to buy assets below their replacement value. This approach involves following three steps:
- Step 1:** Identify the firm's various business segments and calculate the average capitalization ratios for firms in those industries.
- Step 2:** Calculate a "theoretical" market value based upon each of the average capitalization ratios.
- Step 3:** Average the "theoretical" market values to determine the "chop-shop" value of the firm.
- (d) International access to the Indian Capital Markets is limited to FIIs registered with SEBI. The other investors, interested in investing in India can open their account with any registered FII and the FII gets itself registered with SEBI as its sub-account. There are some investors who do not want to disclose their identity or who do not want to get themselves registered with SEBI.

The foreign investors prefer P-Notes route for the following reasons:

- (i) Some investors do not want to reveal their identities. P-Notes serve this purpose.
- (ii) They can invest in Indian Shares without any formalities like registration with SEBI, submitting various reports etc.
- (iii) Saving in cost of investing as no office is to be maintained.
- (iv) No currency conversion.

FII are not allowed to issue P-Notes to Indian nationals, person of Indian origin or overseas corporate bodies.

(e)

Off-Shore Funds	Mutual Funds
Raising of Money internationally and investing money domestically (in India). Number of Investors is very few. Per Capita investment is very high as investors are HNIs.	Raising of Money domestically as well as investing money domestically (in India). Number of Investors is very large. Per Capita investment is very low as investors as meant for retail/ small investors.
Investment Agreement is basis of management of the fund.	Offer Document is the basis of management of the fund.