DISCLAIMER

The Suggested Answers hosted in the website do not constitute the basis for evaluation of the students' answers in the examination. The answers are prepared by the Faculty of the Board of Studies with a view to assist the students in their education. While due care is taken in preparation of the answers, if any errors or omissions are noticed, the same may be brought to the attention of the Director of Studies. The Council of the Institute is not in anyway responsible for the correctness or otherwise of the answers published herein.

PAPER – 2 : STRATEGIC FINANCIAL MANAGEMENT

Question No.1 is compulsory.

*Answer any **five** questions from the remaining **six** questions.*

Working notes should form part of the answer.

Question 1

(a) *ABC Ltd. issued 9%, 5 year bonds of ₹1,000/- each having a maturity of 3 years. The present rate of interest is 12% for one year tenure. It is expected that Forward rate of interest for one year tenure is going to fall by 75 basis points and further by 50 basis points for every next year in further for the same tenure. This bond has a beta value of 1.02 and is more popular in the market due to less credit risk.*

Calculate

(i) Intrinsic value of bond

(ii) Expected price of bond in the market *(5 Marks)*

(b) *A trader is having in its portfolio shares worth ₹85 lakhs at current price and cash ₹15 lakhs. The beta of share portfolio is 1.6. After 3 months the price of shares dropped by 3.2%.*

Determine:

(i) Current portfolio beta

(ii) Portfolio beta after 3 months if the trader on current date goes for long position on ₹100 lakhs Nifty futures. *(5 Marks)*

(c) *You, a foreign exchange dealer of your bank, are informed that your bank has sold a T.T. on Copenhagen for Danish Kroner 10,00,000 at the rate of Danish Kroner 1 = ₹6.5150. You are required to cover the transaction either in London or New York market. The rates on that date are as under:*

Mumbai-London	*₹74.3000*	*₹74.3200*
London-New York	*₹49.2500*	*₹49.2625*
London-Copenhagen	*DKK 11.4200*	*DKK 11.4350*
New York-Copenhagen	*DKK 07.5670*	*DKK 07.5840*

In which market will you cover the transaction, London or New York, and what will be the exchange profit or loss on the transaction? Ignore brokerages. *(5 Marks)*

(d) *On 01-07-2010, Mr. X Invested ₹50,000/- at initial offer in Mutual Funds at a face value of ₹10 each per unit. On 31-03-2011, a dividend was paid @ 10% and annualized yield was 120%. On 31-03-2012, 20% dividend and capital gain of ₹0.60 per unit was given.*

Mr. X redeemed all his 6271.98 units when his annualized yield was 71.50% over the period of holding.

Calculate NAV as on 31-03-2011, 31-03-2012 and 31-03-2013.

For calculations consider a year of 12 months. *(5 Marks)*

Answer

(a) (i) Intrinsic value of Bond

PV of Interest + PV of Maturity Value of Bond

Forward rate of interests

1st Year 12%

2nd Year 11.25%

3rd Year 10.75%

$$\text{PV of interest} = \frac{₹\,90}{(1+0.12)} + \frac{₹\,90}{(1+0.12)(1+0.1125)} + \frac{₹\,90}{(1+0.12)(1+0.1125)(1+0.1075)}$$

= ₹ 217.81

$$\text{PV of Maturity Value of Bond} = \frac{₹1000}{(1+0.12)(1+0.1125)(1+0.1075)} = ₹\,724.67$$

Intrinsic value of Bond = ₹ 217.81 + ₹ 724.67 = ₹ 942.48

(ii) Expected Price = Intrinsic Value x Beta Value

= ₹ 948.48 x 1.02 = ₹ 961.33

(b) Current portfolio

Current Beta for share = 1.6

Beta for cash = 0

Current portfolio beta = 0.85 x 1.6 + 0 x 0.15 = 1.36

Portfolio beta after 3 months:

$$\text{Beta for portfolio of shares} = \frac{\text{Change in value of portfolio of share}}{\text{Change in value of market portfolio (Index)}}$$

$$1.6 = \frac{0.032}{\text{Change in value of market portfolio (Index)}}$$

Change in value of market portfolio (Index) = (0.032 / 1.6) x 100 = 2%

Position taken on 100 lakh Nifty futures : Long

Value of index after 3 months = ₹ 100 lakh x (100 - 0.02)

= ₹ 98 lakh

Mark-to-market paid = ₹ 2 lakh

Cash balance after payment of mark-to-market = ₹ 13 lakh

Value of portfolio after 3 months = ₹85 lakh x (1 - 0.032) + ₹13 lakh

= ₹95.28 lakh

Change in value of portfolio $= \frac{₹100 \text{ lakh} - ₹95.28 \text{ lakh}}{₹100 \text{ lakh}} = 4.72\%$

Portfolio beta = 0.0472/0.02 = 2.36

(c) Amount realized on selling Danish Kroner 10,00,000 at ₹ 6.5150 per Kroner = ₹ 65,15,000.

Cover at London:

Bank buys Danish Kroner at London at the market selling rate.

Pound sterling required for the purchase (DKK 10,00,000 ÷ DKK 11.4200) = GBP 87,565.67

Bank buys locally GBP 87,565.67 for the above purchase at the market selling rate of ₹ 74.3200.

The rupee cost will be = ₹ 65,07,88

Profit (₹ 65,15,000 - ₹ 65,07,881) = ₹ 7,119

Cover at New York:

Bank buys Kroners at New York at the market selling rate.

Dollars required for the purchase of Danish Kroner (DKK10,00,000 ÷ 7.5670) = USD 1,32,152.77

Bank buys locally USD 1,32,152.77 for the above purchase at the market selling rate of ₹ 49.2625.

The rupee cost will be = ₹ 65,10,176.

Profit (₹ 65,15,000 - ₹ 65,10,176) = ₹ 4,824

The transaction would be covered through London which gets the maximum profit of ₹ 7,119 or lower cover cost at London Market by (₹65,10,176 - ₹65,07,881) = ₹2,295

(d) Yield for 9 months (120% x 9/12) = 90%

Market value of Investments as on 31.03.2011 = ₹ 50,000/- + (₹ 50,000x 90%)

= ₹ 95,000/

Therefore, NAV as on 31.03.2011 = (₹ 95,000 - ₹ 5,000)/5,000 = ₹ 18.00

Since dividend was reinvested by Mr. X, additional units acquired = $\frac{₹\,5,000}{₹18}$ = 277.78 unit

Therefore, units as on 31.03.2011 = 5,000 + 277.78 = 5,277.78

Alternatively, units as on 31.03.2011 = (₹ 95,000/₹18) = 5,277.78

Dividend as on 31.03.2012 = 5,277.78 x ₹ 10 x 0.2 = ₹10,555.56

Let X be the NAV on 31.03.2012, then number of new units reinvested will be ₹10,555.56/X.

Accordingly 6,271.98 units shall consist of reinvested units and 5277.78 (as on 31.03.2011).

Thus, by way of equation it can be shown as follows:

$$6271.98 = \frac{₹10,555.56}{X} + 5277.78$$

Therefore, NAV as on 31.03.2012 = ₹ 10,555.56/(6,271.98 – 5,277.78) = ₹ 10.62

NAV as on 31.03.2013 = ₹ 50,000 (1+0.715x33/12)/6,271.98 = ₹ 23.65

Question 2

(a) Mr. Ram is holding the following securities:

Particulars of Securities	*Cost ₹*	*Dividends*	*Market Price*	*Beta*
Equity Shares:				
Gold Ltd.	*11,000*	*1,800*	*12,000*	*0.6*
Silver Ltd.	*16,000*	*1,000*	*17,200*	*0.8*
Bronze Ltd.	*12,000*	*800*	*18,000*	*0.6*
GOI Bonds	*40,000*	*4,000*	*37,500*	*1.0*

Calculate:

(i) Expected rate of return in each case, using the Capital Asset Pricing Model (CAPM).

(ii) Average rate of return, if risk free rate of return is 14%. *(8 Marks)*

(b) *An American firm is under obligation to pay interests of Can$ 1010000 and Can$ 705000 on 31st July and 30th September respectively. The Firm is risk averse and its policy is to hedge the risks involved in all foreign currency transactions. The Finance Manager of the firm is thinking of hedging the risk considering two methods i.e. fixed forward or option contracts.*

It is now June 30. Following quotations regarding rates of exchange, US$ per Can$, from the firm's bank were obtained:

Spot	*1 Month Forward*	*3 Months Forward*
0.9284-0.9288	*0.9301*	*0.9356*

Price for a Can$ /US$ option on a U.S. stock exchange (cents per Can$, payable on purchase of the option, contract size Can$ 50000) are as follows:

Strike Price	*Calls*		*Puts*	
(US$/Can$)	*July*	*Sept.*	*July*	*Sept.*
0.93	*1.56*	*2.56*	*0.88*	*1.75*
0.94	*1.02*	*NA*	*NA*	*NA*
0.95	*0.65*	*1.64*	*1.92*	*2.34*

According to the suggestion of finance manager if options are to be used, one month option should be bought at a strike price of 94 cents and three month option at a strike price of 95 cents and for the remainder uncovered by the options the firm would bear the risk itself. For this, it would use forward rate as the best estimate of spot. Transaction costs are ignored.

Recommend, which of the above two methods would be appropriate for the American firm to hedge its foreign exchange risk on the two interest payments. *(8 Marks)*

Answer

(a) (i) Expected rate of return

	Total Investments	Dividends	Capital Gains
Gold Ltd.	11,000	1,800	1,000
Silver Ltd.	16,000	1,000	1,200
Bronze Ltd.	12,000	800	6,000
GOI Bonds	40,000	4,000	(2,500)
	79,000	7,600	5,700

$$\text{Expected Return on market portfolio} = \frac{7,600 + 5,700}{79,000} = 16.84\%$$

CAPM $E(Rp) = R_F + \beta [E(R_M) - R_F]$

Gold Ltd.	14+0.6 [16.84 - 14] =	14 + 1.70	=	15.70%
Silver Ltd.	14+0.8 [16.84 - 14] =	14 + 2.27	=	16.27%
Bronze Ltd.	14+0.6 [16.84 - 14] =	14 + 1.70	=	15.70%
GOI Bonds	14+1 [16.84 - 14] =	14 + 2.84	=	16.84%

(ii) Average Return of Portfolio

$$\frac{15.70 + 16.27 + 15.70 + 16.84}{4} = \frac{64.51}{4} = 16.13\%$$

Alternatively $\frac{0.6 + 0.8 + 0.6 + 1}{4} = \frac{3}{4} = 0.75$

14% + 0.75(16.84% – 14%) = 14% + 2.13% = 16.13%

(b) *Forward Market Cover*

Hedge the risk by buying Can$ in 1 and 3 months time will be:

July - 1010000 X 0.9301 = US $ 939401

Sept. - 705000 X 0.9356 = US $ 659598

Option Contracts

July Payment = 1010000/ 50,000 = 20.20

September Payment = 705000/ 50,000 = 14.10

Company would like to take out 20 contracts for July and 14 contracts for September respectively. Therefore costs, if the options were exercised, will be:-

	July		Sept.	
	Can $	US $	Can $	US $
Covered by Contracts	1000000	940000	700000	665000
Balance bought at spot rate	10000	9301	5000	4678
Option Costs:				
Can $ 50000 x 20 x 0.0102		10200	---	
Can $ 50000 x 14 x 0.0164	---			11480
Total cost in US $ of using Option Contract		959501		681158

Decision: As the firm is stated as risk averse and the money due to be paid is certain, a fixed forward contract, being the cheapest alternative in the both the cases, would be recommended.

Question 3

(a) *ABC Ltd. is contemplating have an access to a machine for a period of 5 years. The company can have use of the machine for the stipulated period through leasing arrangement or the requisite amount can be borrowed to buy the machine. In case of leasing, the company received a proposal to pay annual end of year rent of ₹ 2.4 lakhs for a period of 5 years.*

In case of purchase (which costs ₹10,00,000/-) the company would have a 12%, 5 years loan to be paid in equated installments, each installment becoming due to the beginning of each years. It is estimated that the machine can be sold for ₹2,00,000/- at the end of 5th year. The company uses straight line method of depreciation. Corporate tax rate is 30%. Post tax cost of capital of ABC Ltd. is 10%.

You are required to advice

(i) Whether the machine should be bought or taken on lease.

(ii) Analyse the financial viability from the point of view of the lessor assuming 12% post tax cost of capital.

	PV of ₹1@10% for 5 years	*PV of ₹1 @ 12% for 5 years*
1	*.909*	*.893*
2	*.826*	*.797*
3	*.751*	*.712*
4	*.683*	*.636*
5	*.621*	*.567*

(10 Marks)

(b) *M/s Atlantic Company Limited with a turnover of ₹ 4.80 crores is expecting growth of 25% for forthcoming year. Average credit period is 90 days. The past experience shows that bad debt losses are 1.75% on sales. The Company's administering cost for collecting receivable is ₹ 6,00,000/-.*

It has decided to take factoring services of Pacific Factors on terms that factor will by receivable by charging 2% commission and 20% risk with recourse. The Factor will pay advance on receivables to the firm at 16% interest rate per annum after withholding 10% as reserve.

Calculate the effective cost of factoring to the firm. (Assume 360 days in a year). *(6 Marks)*

Answer

(a) (i) Calculation of loan installment:

₹10,00,000 / (1+ PVIFA 12%, 4)

₹10,00,000 / (1 + 3.038) = ₹ 2,47,647

Debt Alternative: Calculation of Present Value of Outflows

(Amount in ₹)

(1) End of year	*(2) Debt Payment*	*(3) Interest*	*(4) Dep.*	*(5) Tax Shield [(3)+(4)]x0.3*	*(6) Cash outflows (2) – (5)*	*(7) PV factors @ 10%*	*(8) PV*
0	2,47,647	0	0	0	2,47,647	1.000	2,47,647
1	2,47,647	90,282	1,60,000	75,085	1,72,562	0.909	1,56,859
2	2,47,647	71,398	1,60,000	69,419	1,78,228	0.826	1,47,216
3	2,47,647	50,249	1,60,000	63,075	1,84,572	0.751	1,38,614
4	2,47,647	26,305*	1,60,000	55,892	1,91,755	0.683	1,30,969
5	0	0	1,60,000	48,000	(48,000)	0.621	(29,808)
							7,91,497
					Less: Salvage Value ₹ 2,00,000 x 0.621		1,24,200
					Total Present Value of Outflow		6,67,297

*balancing figure

Leasing Decision: Calculation of Present Value of Outflows

Yrs. 1-5 ₹2,40,000 x (1 - 0.30) x 3.790 = ₹6,36,720

Decision: Leasing option is viable.

(ii) From Lessor's Point of View

		(₹)
Cost of Machine		(-) 10,00,000
PV of Post tax lease Rental (₹2,40,000 x 0.7 x 3.605)	6,05,640	
PV of Depreciation tax shield (₹1,60,000 x 0.3 x 3.605)	1,73,040	
PV of salvage value (₹2,00,000 x 0.567)	1,13,400	8,92,080
NPV		(-) 1,07,920

Decision – Leasing proposal is not viable.

(b) Expected Turnover = ₹ 4.80 crore + 25% i.e. ₹ 1.20 crore = ₹ 6.00 crore

	₹ in Lacs	₹ in Lacs
Advance to be given:		
Debtors ₹6.00 crore x 90/360	150.00	

Less: 10% withholding	15.00	135.00
Less: Commission 2%		3.00
Net payment		132.00
Less: Interest @16% for 90 days on ₹132 lacs		5.28
		126.72
Calculation of Average Cost:		
Total Commission ₹6.00 crore x 2%		12.00
Total Interest ₹ 5.28 lacs x 360/90		21.12
		33.12
Less: Admin. Cost	6.00	
Saving in Bad Debts (₹600 lacs x 1.75% x 80%)	8.40	14.40
		18.72
Effective Cost of Factoring $\frac{₹18.72 \text{ lacs}}{₹126.72 \text{ lacs}} \times 100$		14.77%

Question 4

(a) *Trupti Co. Ltd. promoted by a Multinational group "INTERNATIONAL INC" is listed on stock exchange holding 84% i.e. 63 lakhs shares.*

Profit after Tax is ₹4.80 crores.

Free Float Market Capitalisation is ₹19.20 crores.

As per the SEBI guidelines promoters have to restrict their holding to 75% to avoid delisting from the stock exchange. Board of Directors has decided not to delist the share but to comply with the SEBI guidelines by issuing Bonus shares to minority shareholders while maintaining the same P/E ratio.

Calculate

(i) P/E Ratio

(ii) Bonus Ratio

(iii) Market price of share before and after the issue of bonus shares

(iv) Free Float Market capitalization of the company after the bonus shares. *(8 Marks)*

(b) *The Easygoing Company Limited is considering a new project with initial investment, for a product "Survival". It is estimated that IRR of the project is 16% having an estimated life of 5 years.*

Financial Manager has studied that project with sensitivity analysis and informed that annual fixed cost sensitivity is 7.8416%, whereas cost of capital (discount rate) sensitivity is 60%.

Other information available are:

Profit Volume Ratio (P/V) is 70%,

Variable cost ₹60/- per unit

Annual Cash Flow ₹57,500/-

Ignore Depreciation on initial investment and impact of taxation.

Calculate

(i) Initial Investment of the Project

(ii) Net Present Value of the Project

(iii) Annual Fixed Cost

(iv) Estimated annual unit of sales

(v) Break Even Units

Cumulative Discounting Factor for 5 years

8%	9%	10%	11%	12%	13%	14%	15%	16%	17%	18%
3.993	3.890	3.791	3.696	3.605	3.517	3.433	3.352	3.274	3.199	3.127

(8 Marks)

Answer

(a) 1. P/E Ratio:

	% of holding	No. of Shares
Promoter's Holding	84%	63 Lacs
Minority Holding	16%	12 Lacs
Total Shares	100%	75 Lacs

Free Float Market Capitalization = ₹ 19.20 crores

Hence Market price $\frac{₹19.20\text{ crores}}{12.00\text{ lacs}}$ = ₹160 per share

EPS (PAT/No. of Shares) (₹ 4.80 crores /75 lac) = ₹ 6.40 per share

P/E Ratio (₹ 160/ ₹ 6.40) = 25

2. No. of Bonus Shares to be issued:

Promoters holding 84%, = 63 lacs shares

Shares remains the same, but holding % to be taken as 75%

Hence Total shares $= \frac{63 \text{ lacs}}{75\%}$ = 84 lacs

Shares of Minority = 84 lacs – 63 lacs = 21 lacs

Bonus 9 lacs for 12 lacs i.e. 3 bonus for 4 held

3. Market price before & after Bonus:

Before Bonus = ₹160 per share

After Bonus

New EPS $\frac{₹\ 4.80 \text{ crores}}{84 \text{ lacs}}$ = ₹ 5.71

New Market Price (25 x ₹ 5.71) = ₹ 142.75

4. Free Float Capitalization is

₹ 142.75 x 21 lacs = ₹29.9775 crores

(b) (i) Initial Investment

IRR = 16% (Given)

At IRR, NPV shall be zero, therefore

Initial Cost of Investment = PVAF (16%,5) x Cash Flow (Annual)

= 3.274 x ₹ 57,500

= ₹ 1,88,255

(ii) Net Present Value (NPV)

Let Cost of Capital be X, then $\frac{16 - X}{X} = 60\%$

X = 10%

Thus NPV of the project

= Annual Cash Flow x PVAF (10%, 5) – Initial Investment

= ₹ 57,500 x 3.791 – ₹ 1,88,255

= ₹ 2,17,982.50 – ₹ 1,88,255 = ₹ 29,727.50

(iii) Annual Fixed Cost

Let change in the Fixed Cost which makes NPV zero is X. Then,

₹ 29,727.50 – 3.791X = 0

Thus X = ₹ 7,841.60

Let original Fixed Cost be Y then,

Y × 7.8416% = ₹ 7,841.60

Y = ₹ 1,00,000

Thus Fixed Cost is equal to ₹ 1,00,000

(iv) Estimated Annual Units of Sales

$$\text{Selling Price per unit} = \frac{₹\,60}{100\% - 70\%} = ₹\,200$$

$$\frac{\text{Annual Cash Flow + Fixed Cost}}{\text{P/V Ratio}} = \text{Sales Value}$$

$$\frac{₹57,500 + ₹1,00,000}{0.70} = ₹2,25,000$$

$$\text{Sales in Units} = \frac{₹2,25,000}{₹200} = 1,125 \text{ units}$$

(v) Break Even Units

$$\frac{\text{Fixed Cost}}{\text{Contribution Per Unit}} = \frac{1,00,000}{140} = 714.285 \text{ units}$$

Question 5

(a) *M/s Tiger Ltd. wants to acquire M/s. Leopard Ltd. The balance sheet of Leopard Ltd. as on 31st March, 2012 is as follows:*

Liabilities	*₹*	*Assets*	*₹*
Equity Capital(70,000 shares)		*Cash*	*50,000*
Retained earnings	*3,00,000*	*Debtors*	*70,000*
12% Debentures	*3,00,000*	*Inventories*	*2,00,000*
Creditors and other liabilities	*3,20,000*	*Plants & Eqpt.*	*13,00,000*
	16,20,000		*16,20,000*

Additional Information:

(i) *Shareholders of Leopard Ltd. will get one share in Tiger Ltd. for every two shares. External liabilities are expected to be settled at ₹ 5,00,000. Shares of Tiger Ltd. would be issued at its current price of ₹ 15 per share. Debentureholders will get 13% convertible debentures in the purchasing company for the same amount. Debtors and inventories are expected to realize ₹ 2,00,000.*

(ii) *Tiger Ltd. has decided to operate the business of Leopard Ltd. as a separate division. The division is likely to give cash flows (after tax) to the extent of ₹ 5,00,000 per year for 6 years. Tiger Ltd. has planned that, after 6 years, this division would be demerged and disposed of for ₹ 2,00,000.*

(iii) *The company's cost of capital is 16%.*

Make a report to the Board of the company advising them about the financial feasibility of this acquisition.

Net present values for 16% for ₹ 1 are as follows:

Years	*1*	*2*	*3*	*4*	*5*	*6*
PV	*.862*	*.743*	*.641*	*.552*	*.476*	*.410*

(10 Marks)

(b) *Ram buys 10,000 shares of X Ltd. at a price of ₹ 22 per share whose beta value is 1.5 and sells 5,000 shares of A Ltd. at a price of ₹ 40 per share having a beta value of 2. He obtains a complete hedge by Nifty futures at ₹ 1,000 each. He closes out his position at the closing price of the next day when the share of X Ltd. dropped by 2%, share of A Ltd. appreciated by 3% and Nifty futures dropped by 1.5%.*

What is the overall profit/loss to Ram? *(6 Marks)*

Answer

(a) Calculation of Purchase Consideration

	₹
Issue of Share 35000 x ₹15	5,25,000
External Liabilities settled	5,00,000
13% Debentures	3,00,000
	13,25,000
Less: Realization of Debtors and Inventories	2,00,000
Cash	50,000
	10,75,000

Net Present Value = PV of Cash Inflow + PV of Demerger of Leopard Ltd. – Cash Outflow

= ₹ 5,00,000 PVAF(16%,6) + ₹ 2,00,000 PVF(16%, 6) – ₹ 10,75,000

= ₹ 5,00,000 x 3.684 + ₹ 2,00,000 x 0.410 – ₹ 10,75,000

= ₹ 18,42,000 + ₹ 82,000 – ₹ 10,75,000

= ₹ 8,49,000

Since NPV of the decision is positive it is advantageous to acquire Leopard Ltd.

(b) No. of the Future Contract to be obtained to get a complete hedge

$$= \frac{10000 \times ₹22 \times 1.5 - 5000 \times ₹40 \times 2}{₹1000}$$

$$= \frac{₹3,30,000 - ₹4,00,000}{₹1000} = 70 \text{ contracts}$$

Thus, by purchasing 70 Nifty future contracts to be long to obtain a complete hedge.

Cash Outlay

= 10000 x ₹ 22 – 5000 x ₹ 40 + 70 x ₹ 1,000

= ₹ 2,20,000 – ₹ 2,00,000 + ₹ 70,000

= ₹ 90,000

Cash Inflow at Close Out

= 10000 x ₹ 22 x 0.98 – 5000 x ₹ 40 x 1.03 + 70 x ₹ 1,000 x 0.985

= ₹ 2,15,600 – ₹ 2,06,000 + ₹ 68,950

= ₹ 78,550

Gain/ Loss

= ₹ 78,550 – ₹ 90,000 = - ₹ 11,450 (Loss)

Question 6

(a) A share of Tension-free Economy Ltd. is currently quoted at a price earnings ratio of 7.5 times. The retained earning being 37.5% is ₹3 per share.

Calculate

(i) The company's cost of equity, if investors' expected rate of return is 12%.

(ii) Market price of share, if anticipated growth rate is 13% per annum with same cost of capital.

(iii) Market price per share, if the company's cost of capital is 18% and anticipated growth rate is 15% per annum, assuming other conditions remaining the same.

(8 Marks)

(b) *Your bank's London office has surplus funds to the extent of USD 5,00,000/- for a period of 3 months. The cost of the funds to the bank is 4% p.a. It proposes to invest these funds in London, New York or Frankfurt and obtain the best yield, without any exchange risk to the bank. The following rates of interest are available at the three centres for investment of domestic funds there at for a period of 3 months.*

London	*5 % p.a.*
New York	*8% p.a.*
Frankfurt	*3% p.a.*

The market rates in London for US dollars and Euro are as under:

London on New York	
Spot	*1.5350/90*
1 month	*15/18*
2 month	*30/35*
3 months	*80/85*
London on Frankfurt	
Spot	*1.8260/90*
1 month	*60/55*
2 month	*95/90*
3 month	*145/140*

(8 Marks)

At which centre, will be investment be made & what will be the net gain (to the nearest pound) to the bank on the invested funds?

Answer

(a) (i) Calculation of cost of capital – In the question investor's expected rate of return can be assumed as rate of return on retained earnings and thus cost of equity shall be computed as follows:

g = b x r

g = 0.375 x 12% = 4.5%

Retained earnings	37.5%	₹ 3 per share
Dividend*	62.5%	₹ 5 per share
EPS	100.0%	₹ 8 per share
P/E Ratio	7.5 times	

Market price is ₹ 7.5 × 8 = ₹ 60 per share

Cost of equity capital = (Dividend/price × 100) + growth %

= (5/60 × 100) + 4.5% = 12.83%.

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

(ii) With the growth rate given (13%) the Market price of share shall become negative, which is not possible.

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

(b) (i) If investment is made at London

Convert US$ 5,00,000 at Spot Rate (5,00,000/1.5390)		= £ 3,24,886
Add: £ Interest for 3 months on £ 324,886 @ 5%		= £ 4,061
		= £ 3,28,947
Less: Amount Invested	$ 5,00,000	
Interest accrued thereon	$ 5,000	
	= $ 5,05,000	
Equivalent amount of £ required to pay the above sum ($ 5,05,000/1.5430)		= £ 3,27,285
Arbitrage Profit		= £ 1,662

(ii) If investment is made at New York

Gain $ 5,00,000 (8% - 4%) x 3/12	= $ 5,000
Equivalent amount in £ 3 months ($ 5,000/ 1.5475)	£ 3,231

(iii) If investment is made at Frankfurt

Convert US$ 500,000 at Spot Rate (Cross Rate) 1.8260/1.5390	= € 1.1865
Euro equivalent US$ 500,000	= € 5,93,250
Add: Interest for 3 months @ 3%	= € 4,449
	= € 5,97,699
3 month Forward Rate of selling € (1/1.8150)	= £ 0.5510
Sell € in Forward Market € 5,97,699 x £ 0.5510	= £ 3,29,332
Less: Amounted invested and interest thereon	= £ 3,27,285
Arbitrage Profit	= £ 2,047

Since out of three options the maximum profit is in case investment is made in New York. Hence it should be opted.

Question 7

Write notes on any four of the following:

(a) Explain the concept, 'Zero date of a Project' in project management.

(b) XYZ Bank, Amsterdam, wants to purchase ₹ 25 million against £ for funding their Nostro account and they have credited LORO account with Bank of London, London.

Calculate the amount of £'s credited. Ongoing inter-bank rates are per $, ₹ 61.3625/3700 & per £, $ 1.5260/70.

(c) What is an Exchange Traded Fund? What are its key features?

(d) What is an equity curve out? How does it differ from a spin off?

(e) What is money market? What are its features? What kind of inefficiencies it is suffering from? (4 x 4 =16 Marks)

Answer

(a) Zero Date of a Project means a date is fixed from which implementation of the project begins. It is a starting point of incurring cost. The project completion period is counted from the zero date. Pre-project activities should be completed before zero date. The pre-project activities should be completed before zero date. The pre-project activities are:

(1) Identification of project/product
(2) Determination of plant capacity
(3) Selection of technical help/collaboration
(4) Selection of site.
(5) Selection of survey of soil/plot etc.
(6) Manpower planning and recruiting key personnel
(7) Cost and finance scheduling.

(b) To purchase Rupee, XYZ Bank shall first sell £ and purchase $ and then sell $ to purchase Rupee. Accordingly, following rate shall be used:

$(£/₹)_{ask}$

The available rates are as follows:

$(\$/£)_{bid}$ = $1.5260

$(\$/£)_{ask}$ = $1.5270

$(₹/\$)_{bid}$ = ₹ 61.3625

$(₹/\$)_{ask}$ = ₹ 61.3700

From above available rates we can compute required rate as follows:

$(£/₹)_{ask}$ = $(£/\$)_{ask}$ x $(\$/₹)_{ask}$

= (1/1.5260) x (1/61.3625)

= £ 0.01068 or £ 0.0107

Thus amount of £ to be credited

= ₹ 25,000,000 x £ 0.0107

= £ 267,500

(c) Exchange Traded Funds (ETFs) were introduced in US in 1993 and came to India around 2002. ETF is a hybrid product that combines the features of an index mutual fund and stock and hence, is also called index shares. These funds are listed on the stock exchanges and their prices are linked to the underlying index. The authorized participants act as market makers for ETFs.

ETF can be bought and sold like any other stock on stock exchange. In other words, they can be bought or sold any time during the market hours at prices that are expected to be closer to the NAV at the end of the day. NAV of an ETF is the value of the underlying component of the benchmark index held by the ETF plus all accrued dividends less accrued management fees.

There is no paper work involved for investing in an ETF. These can be bought like any other stock by just placing an order with a broker.

Some other important features of ETF are as follows:

1. It gives an investor the benefit of investing in a commodity without physically purchasing the commodity like gold, silver, sugar etc.
2. It is launched by an asset management company or other entity.
3. The investor does not need to physically store the commodity or bear the costs of upkeep which is part of the administrative costs of the fund.
4. An ETF combines the valuation feature of a mutual fund or unit investment trust, which can be bought or sold at the end of each trading day for its net asset value, with the tradability feature of a closed-end fund, which trades throughout the trading day at prices that may be more or less than its net asset value.

(d) Equity Curve out can be defined as partial spin off in which a company creates its own new subsidiary and subsequently bring out its IPO. It should be however noted that parent company retains its control and only a part of new shares are issued to public.

On the other hand in Spin off parent company does not receive any cash as shares of subsidiary company are issued to existing shareholder in the form of dividend. Thus, shareholders in new company remain the same but not in case of Equity curve out.

(e) In a wider spectrum, a money market can be defined as a market for short-term money and financial assets that are near substitutes for money with minimum transaction cost.

Features:

- The term short-term means generally a period upto one year and near substitutes to money is used to denote any financial asset which can be quickly converted into money.
- Low cost.
- It provides an avenue for equilibrating the short-term surplus funds of lenders and the requirements of borrowers.
- It, thus, provides a reasonable access to the users of short term money to meet their requirements at realistic prices.
- The money market can also be defined as a centre in which financial institutions congregate for the purpose of dealing impersonally in monetary assets.

Inefficiencies:

(i) Markets not integrated,
(ii) High volatility,
(iii) Interest rates not properly aligned,
(iv) Players restricted,
(v) Supply based-sources influence uses,
(vi) Not many instruments,
(vii) Players do not alternate between borrowing and lending,
(viii) Reserve requirements,
(ix) Lack of transparency,
(x) Inefficient Payment Systems,
(xi) Seasonal shortage of funds,
(xii) Commercial transactions are mainly in cash, and
(xiii) Heavy Stamp duty limiting use of exchange bills