Paper – 14 – Strategic Financial Management

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Full Marks : 100 **Time allowed: 3 hours**

Answer Question No. 1 which is compulsory and carries 20 marks

and any five from Question No. 2 to 8.

Section A [20 marks]

1. Choose the correct option among four alternative Answer. (1 Mark for correct choice, 1 mark for justification.) [10*2=20 marks]

(i) Dividend-Payers Ltd. has a stable income and stable dividend policy. The average annual dividend payout is ₹ 27 per share (Face Value = ₹100). You are required to find out Dividend payout in year 2, if the company were to have an expected market price of ₹160 per share at the existing cost of equity.
[The market price in year 1 is ₹ 150]

(A) ₹28.88
(B) ₹ 26.86
(C) ₹28.80
(D) ₹ 26.98

(ii) The interest rate in Germany is 11 per cent and the expected inflation rate is 5 per cent. The British interest rate is 9 per cent. How much is the expected inflation rate in Britain?
(A) 3.0%
(B) 3.1%
(C) 4.5%
(D) 2.9%

(iii) A project had an equity beta of 1.2 and was going to be financed by a combination of 30% debt and 70% equity (assume debt beta = 0). Hence, the required rate of return of the project is (assume R_f = 10% and R_m =18%)
(A) 16.27%
(B) 17.26%
(C) 16.72%
(D) 12.76%

(iv) Consider the following quotes.

Spot (Euro/Pound) = 1.6543/1.6557

Spot (Pound/NZ$) = 0.2786/0.2800

Calculate the % spread on the Euro/Pound Rate.

(A) 0.085%

(B) 0.0085%

(C) 0.85%

(D) 0.00085%

(v) A company has expected Net Operating Income – ₹ 2,40,000; 10% Debt – ₹7,20,000 and Equity Capitalisation rate - 20% what is the weighted average cost of capital for the company?
(A) 0.15385

(B) 0.13585

(C) 0.18351

(D) 0.15531

(vi) The price of Swedish Krones is $ 0.14 today. If it appreciates by 10% today, how many Krones a dollar will buy tomorrow?

(A) 6.49351

(B) 4.69351

(C) 3.49513

(D) 5.64913

(vii) A firm has sales of ₹75,00,000 variable cost of ₹42,00,000 and fixed cost of ₹6,00,000.It has a debt of ₹45,00,000 at 9% interest and equity of ₹55,00,000. At what level of sales, the EBIT of the firm will be equal to zero?

(A) ₹28,48,500

(B) ₹28,84,500

(C) ₹22,84,500

(D) ₹26,48,500

(viii) E Limited has earnings before interest and taxes (EBIT) of ₹ 10 million at a cost of 7%., Cost of equity is 12.5%. Ignore taxes. What is the overall cost of capital?

(A) 11.26%

(B) 11.62%

(C) 16.12%

(D) 12.61%

(ix) The following various currency quotes are available from the State Bank of India:

₹/£ 81.31/81.33

£/$ 0.6491/0.6498

$/¥ 0.01098/0.01102

The rate at which yen(¥) can be purchased with rupees will be:

(A) 1.5270

(B) 1.5890

(C) 0.5824

(D) 0.7824

(x) The dollar is currently trading at ₹ 40. If rupee depreciates by 10%, what will be the spot rate?

(A) ₹ 0.0525

(B) ₹ 0.0552

(C) ₹ 0.0225

(D) ₹ 0.0522

Answers: 1

(i) (C) ₹28.80

Ke = 27/150 × 100 = 18%

$$Ke = \frac{DPS}{160} = 18\% \quad \therefore DPS = 160 \times 18\% = ₹28.80$$

(ii) (B) 3.1%

If purchasing power parity holds, then the British inflations rate will be:

$$\frac{1.11}{1.09} = \frac{1.05}{1+iB} \text{ Or } iB = \frac{1.09 \times 1.05}{1.11} - 1 = 0.031 \text{ or } 3.1\%$$

(iii) (C) 16.72%

$$\beta = \left(\beta_{Equity} \times \frac{E}{D+E}\right) + \left(\beta_{Debt} \times \frac{D}{D+E}\right)$$

$= (1.2 \times 0.70) + (0 \times 0.30) = 0.84$

Required Rate of Return = $R_f + \beta(R_m - R_f)$ = 10% + 0.84 (18%

= 10% + 6.72% = 16.72%

(iv) (A) 0.085%

$$\text{The \% spread on Euro/Pound} = \frac{1.6557 - 1.6543}{1.6543} \times 100 = 0.085\%$$

(v) (A) 0.15385

$$\text{Market value of equity (S)} = \frac{2,40,000 - 72000(I)}{0.20} = 840000$$

Total value of firm (V) = S + D = 840000 + 720000 = 1560000

$$K_0 = \frac{NOI}{V} = \frac{240000}{1560000} = 0.15385$$

(vi) (A) 6.49351

The price of Swedish krones = \$0.14

At 10% appreciation, it will be worth = \$0.154

$$\text{A dollar will buy } \frac{1}{0.154} = 6.49351 \text{ krones tomorrow}$$

(vii) (C) ₹22,84,500

EBIT to became zero means 100% reduction in EBIT.

$$\text{F. Leverage} = \frac{EBIT}{EBT} = \frac{2700000}{2295000} = 1.1764$$

$$\text{O. Leverage} = \frac{\text{Contribution}}{\text{EBIT}} = \frac{3300000}{2700000} = 1.2222$$

Combined Leverage = 1.1764 × 1.2222= 1.438

Sales have to drop by 100/1.438 = 69.54%

New Sales will be = 7500000 × (1-0.6954) = ₹2284500 (approx)

(viii) (A) 11.26%

Market Value of equity(S) =(EBIT-1)/k_e =(₹10,000,-1,400,000)/0.125

= ₹68,800,000

Total value of Firm(V) = S+ D = ₹68,800,000 + ₹20,000,000

= ₹88,800,000

Overall cost of capital (K0) =(EBIT-1)/V =₹10,000,000/₹88,800,000 = 11.26%

(ix) (C) 0.5824

To purchase ¥, we need to have a quote of ¥ in terms of ₹.

We need only the 'ask' quote

Ask (₹/¥) = Ask (₹/£) × Ask (£/$) × Ask ($/¥)

= 81.33 × 0.6498 × 0.01102 = 0.5824

(x) (C) ₹0.0225

Re quote : ₹1 = $1/40 = 0.25

If rupee depreciates by 10%, then = 0.025 – 0.0025 = ₹0.0225

Section B[80 marks]

Answer any 5 questions from this section

2 (a) A Company requires ₹15 Lakhs for the installation of a new unit, which would yield an annual EBIT of ₹ 2,50,000. The Company's objective is to maximise EPS. It is considering the possibility of Issuing Equity Shares plus raising a debt of ₹3,00,000, ₹6,00,000 and ₹9,00,000. The current Market Price per Share is ₹50 which is expected to ₹40 per share if the market borrowings were to exceed ₹7,00,000. The cost of borrowing are indicated as follows:

Level of Borrowing	Upto ₹2,00,000	₹2,00,000 to ₹6,00,000	₹6,00,000 to ₹9,00,000
Cost of Borrowing	12% p.a.	15% p.a.	17% p.a.

Assuming a tax rate of 50%, work out the EPS and the scheme, which you would recommended to the Company. [8 marks]

2 (b) Mr. X a business man has two independent investments A and B available to him: but he lacks the capital to undertake both of them simultaneously. He can choose to take A first and then stop, or if A is successful then take B, or vice versa. The probability of success on A is 0.7, while for B it is 0.4. Both investments require an initial capital outlay of ₹ 2,000, and both return nothing if the venture is unsuccessful. Successful completion of A will return ₹ 3,000 (over cost), and successful completion of B will return ₹ 5,000 (over cost). Draw the decision tree and determine the best strategy. [8 marks]

Answer: 2

2 (a) **Statement showing EPS under the different schemes**

(Amount in ₹)

Particulars	Scheme I	Scheme II	Scheme III
Capital Required	15,00,000	15,00,000	15,00,000
Less : Debt Content	3,00,000	6,00,000	9,00,000
Balance Equity Capital required	**12,00,000**	**9,00,000**	**6,00,000**
Market Price per Share	₹50	₹50	₹40
Number of Equity Shares to be issued (Equity Capital ÷ MPS)	24,000	18,000	15,000

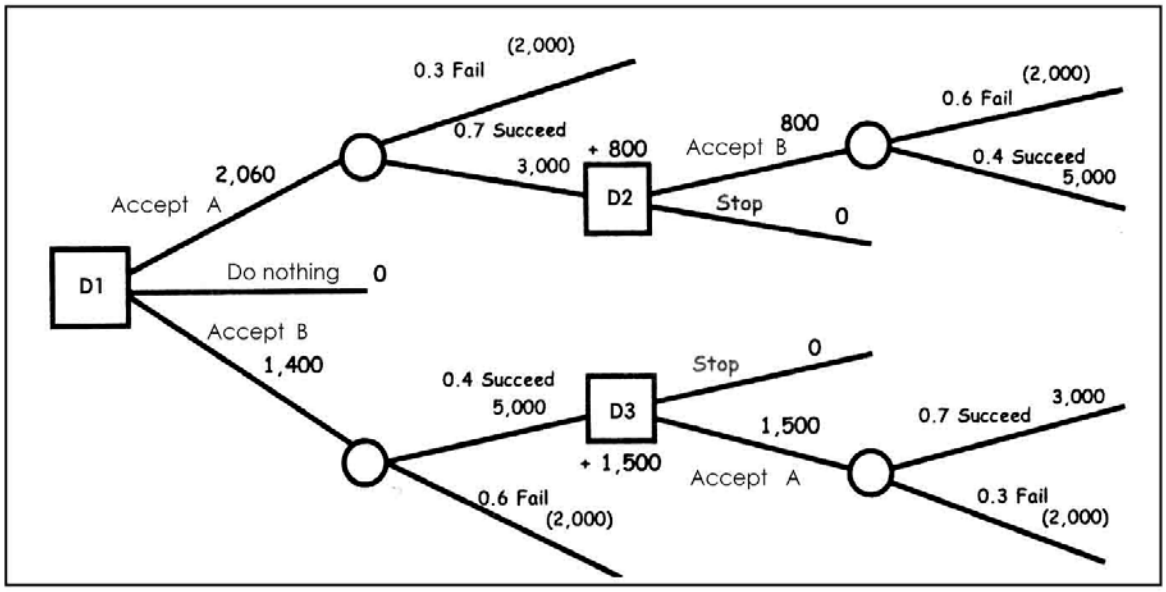
Profitability Statement

EBIT		2,50,000	2,50,000	2,50,000
Less: Interest on Debt:	First ₹2,00,000 at 12%	24,000	24,000	24,000
	Next ₹4,00,000 at 15%	15,000	60,000	60,000
	Balance at 17%			51,000
Total Interest		39,000	84,000	1,35,000
EBIT		2,11,000	1,66,000	1,15,000
Less : Tax at 50%		1,05,500	83,000	57,500
EAT		1,05,500	83,000	57,500
Earning Per Share (EPS) = EAI ÷ No. of shares		**4.40%**	**4.61%**	**3.83%**
Average Interest Rate = Total Interest ÷ Debt		**12%**	**14%**	**15%**
ROCE = EBIT ÷ Capital Employed		**16.67%**	**16.67%**	**16.67%**

Conclusion: EPS is maximum under Scheme II and is hence preferable.

Leverage Effect: Use of Debt Funds and Financial Leverage will have a favourable effect only if ROCE>Interest rate. ROCE is 16.67% and hence upto 15% interest rate, i.e. Scheme II, use of debt will have favourable impact on EPS and ROE. However, when interest rate is higher at 17%, financial leverage will have negative impact and hence EPS falls from ₹4.61 to ₹3.83.

2 (b) The required decision tree is as shown below:



There are three decision points in this tree. These are indicated as 1, 2 and 3.

Evaluation of decision point 3:

I. Accept A (₹)

Outcome	Probability	Conditional Values	Expected Values
Success	0.7	3,000	2,100
Failure	0.3	(2,000)	(600)
			1,500

II. Stop: Expected Value = 0

Evaluation of decision point 2:

I. Accept B (₹)

Outcome	Probability	Conditional Values	Expected Values
Success	0.4	5,000	2,000
Failure	0.6	(2,000)	(1,200)
			800

II. Stop: Expected Value = 0

Evaluation of decision point 1:

I. Accept A (₹)

Outcome	Probability	Conditional Values	Expected Values
Success	0.7	3,000+800	2,660
Failure	0.3	(2,000)	(600)
			2,060

II. Accept B (₹)

Outcome	Probability	Conditional Values	Expected Values
Success	0.4	5,000+1,500	2,600
Failure	0.6	(2,000)	(1,200)
			1,400

III. Do Nothing: Expected Value = 0

Hence, the best strategy is to accept A first, and if it is successful, then accept B.

3 (a) Mr. Y on 01.07.2014, during the initial offer of some Mutual Fund invested in 20,000 units having face value of ₹ 10 for each unit. On 31.03.2015 the dividend operated by the M.F. was 10% and Mr. Y found that his annualized yield was 153.33%.On 31.03.2015, 20% dividend was given. On 31.03.2017 Mr. Y redeemed all his balances of 22,592.23 units when his annualized yield was 73.52%. What are the NAVs as on 31.03.2015, 31.03.2016 and 31.03.2017? [6 marks]

3 (b) Bright Mutual Fund sponsored an open-ended equity oriented scheme "Kautilya Opportunity Fund". There were two plans, viz. 'X'- Dividend Reinvestment Plan and 'Y' - Bonus Plan.

At the time of Initial Public Offer on 01.04.2007, Mr. R and Mr. H invested ₹1,00,000 each and had chosen 'X' and 'Y' Plan respectively.

The history of the Fund is as follows:

Date	Dividend %	Bonus Ratio	Net Assets Value per unit (Face value ₹10)	
			Plan X	Plan Y

28.07.2011	**20**	**5:4**	**30.70**	**31.40**
31.03.2012	**70**		**58.42**	**31.05**
31.10.2015	**40**		**42.18**	**25.02**
15.03.2016	**25**		**46.45**	**29.10**
31.03.2016	**-**	**1:3**	**42.18**	**20.05**
24.03.2017	**40**	**1:4**	**48.10**	**19.95**
31.07.2017	**-**		**53.75**	**22.98**

On 31st July, both the investors redeemed all the balance units.

Consider:

(1) Long-term Capital Gain is exempt from Income tax.

(2) Short-term Capital Gain is subject to 10% Income tax.

(3) Security Transaction Tax 0.2% only on sale/redemption of units.

(4) Ignore Education Cess.]

Required: Calculate Annual rate of return for each of the investors. [10 marks]

Answers: 3

3 (a) Yield for 9 months= 153.33% × 9/12 =115%

Amount receivable as on 31.03.2012

= 2,00,000 + (2,00,000 ×115/100)

= 2,00,000 + 2,30,000

= 4,30,000.

NAV as on 31.03.2015 $= \frac{₹(4,30,000-20,000)}{20,000 \text{units}} = ₹ 20.50$

Units as on 31.03.2015 $= \frac{₹4,30,000}{₹20.50} = 20,975.61$ units

Dividend as on 31.03.2016 = 20,975.61units × ₹10×20/100 =₹41,951.22

NAV as on 31.03.2016 $= \frac{₹41951.22}{22592.23-20975.61} = ₹25.95$

NAV as on 31.03.2017 $= \frac{₹2,00,000+(2,00,000\times 73.52/100\times 33/12)}{22592.23 \text{units}}$

$= \frac{₹2,00,000+ ₹4,04,360}{22592.23 \text{ units}}$

$= ₹26.75$

3 (b) 'X' Dividend Equalization Plan – Mr. R

Date	Details	Dividend %	Units
01.04.2007	IPO	—	10,000
28.07.2011	Dividend	20 % = 0.20	651
31.03.2012	-ditto-	70 % = 0.70	1,276
31.10.2015	-ditto-	40 % = 0.40	1,131
15.03.2016	-ditto-	25 % = 0.25	703
24.03.2017	-ditto-	40 % = 0.40	1,144

NAV rate (₹)	Cost (₹)	Cumulative units	Face Value (₹)
F. V. 10.00	1,00,000	10,000	1,00,000
NAV. 30.70	20,000	10,651	1,06,510
58.42	74,557	11,927	1,19,270
42.18	47,708	13,058	1,30,580
46.45	32,645	13,761	1,37,610
48,10	55,044	14,905	1,49,050

Cost = face value × Dividend%; Dividend was re-invested; and units issued = [Cost ÷ NAV].

Details	Value (₹)
Redemption value (R.V) = 14,905 units × 53.75 [NAV on 21.07.2013]	8,01,144
Less: S T T @ 0.2 % on ₹ 8,01,144	(-) 1,602
R.V. Net of taxes	7,99,542
Less: Short-term capital gain @ 10 % = 1,144 × (53.75 - 48.10) × 0.10	(-) 646
Less: Investment	(-)1,00,000
Net Return from investment	**6,98,896**

Return = [₹ 6,98,896 / 1,00,000] × [12 / 124] × 100 = 67.6351 = **67.64** %

[Note: From April 01 - 04 - 2007 to July 2017 = 124 months.]

'Y' – BONUS PLAN – Mr. H.

Date	Details	Bonus	Units	Cum. Units
01.04.2007	IPO	Initial issue	10,000	10,000
31.03.2012	Bonus	5 for 4	10,000 × 5/4 = 12,500	22,500
31.03.2016	Bonus	1 for 3	22,500 × 1/3 = 7,500	30,000
24.03.2017	Bonus	1 for 4	30,000 ×1/4 % = 7,500	37,500

Return = [7,57,753/1,00,000] × [12/124] × 100 = 73.33%

4 (a) The historical rates of return on the stock of SMOOTH-TECH LTD. and the Market return are given below:

Year	Smooth-tech Return %	Market Return %
2012	**12**	**15**
2013	**9**	**13**
2014	**(-) 11**	**14**
2015	**8**	**(-) 9**
2016	**11**	**12**
2017	**4**	**9**

You are required to:

(i) Determine the Equation for the Characteristic line of the Stock of SMOOTH-TECH LTD., and

(ii) Interpret the Slope and the intercept of the characteristic line. [marks 10]

(b) The total market value of the equity share of DHARAM CO. is ₹60,00,000 and the total value of the debt is ₹40,00,000. The treasurer estimates that the beta of the stocks is

currently 1.5 and that the expected risk premium on the market is 12 per cent. The treasury bill rate is 10 per cent.

Required:

(i) What is the beta of the company's existing portfolio of assets?
(ii) Estimate the company's cost of capital and the discount rate for an expansion of the company's present business. [6 marks]

Answer: 4

4(a)(i)

Smooth-tech (Y)	Market (X)	XY	X^2
12	15	180	225
9	13	117	169
(-)11	14	(-) 154	196
8	(-) 9	(-) 72	81
11	12	132	144
4	9	36	81
∑Y = 33	∑X= 54	∑XY= 239	$\sum X^2 = 896$

$Beta = [\sum XY - n\bar{X}\bar{Y}/[\sum X^2 - n(\bar{X})^2] = [239-6(9)(5.5)]/[896-6(9)^2]$

=[239 – 297]/[896 – 486] = (-) 58/410 = (-) 0.1415 = (-) 0.14

$\alpha = \bar{Y} - \beta(\bar{X})$ = 5.50 – [(-) 0.14 × (9)] = 5.50 + 1.27 = 6.77

Therefore, Equation **Y = 6.77 – 0.14 X**

(ii) The return on the stock of Smooth- tech is 6.77% when the return on the market is 0 (zero). This can be "said from the intercept of 6.77 %. Slope is but Beta of Smooth-tech, a measure of systematic risk.

4 (b) Total value of the company = Value of Debt + Value of Equity = D + E
= 40,00,000 + 60,00,000 = ₹ 1,00,00,000

Beta of Debt = β_D = 0 (zero), since the company's debt capital is risk-less.

Also, Tax = 0(zero), because of no information given.

β_A = [{β_E × Equity} + {β_D x Debt (1 - Tax)] / [Equity + Debt × (1 - Tax)]

= [{1.5 × ₹ 60 lakhs} + {0 × ₹ 40 lakhs}] / [₹ 100 lakhs] = **0.9 + 0 = 0.9**

Estimation of Company's cost of capital

Cost of capital = $K_E = R_F$ + [β_A x Risk Premium] = 10 % + (0.9 × 12 %) = 10 + 10.8 = 20.8

Discount rate for an expansion of the company's present business: In case of expansion plan, 20.8 % can be used as discount factor.

In case of Diversification Plan, a different discount factor would be used depending upon its risk profile.

5 (a) (i) A portfolio manager owns three stocks:

Stock	Shares owned	Stock price (₹)	Beta
1	**1 lakh**	**400**	**1.1**

2	**2 lakhs**	**300**	**1.2**
3	**3 lakhs**	**100**	**1.3**

The spot Nifty Index Price is at ₹1350 and Futures price is ₹1352. Use stock Index Futures to:

(I) decrease the portfolio beta to 0.8; and

(II) increase the portfolio beta to 1.5.

Assume the index factor is 100. Find out the number of contracts to be bought or sold of Stock Index Futures. [marks 6]

(ii) In September 30, 2017, a six-month Put on VINTEX LTD.'s stock with an exercise price of ₹75 sold for ₹6.82. The stock price was ₹70.00. The risk-free rate was 6% per annum. How much would you be willing to pay for a CALL on Vintex Ltd.'s stock with same maturity and exercise price?

[Given. PVIF (6%, ½ year) = 0.9709 and PVIF (6%, 1 year) = 0.9434] [marks 4]

(b) Suppose a dealer Rupam quotes 'All-in-cost' for a generic swap at 8% against six month LIBOR flat. If the notional principal amount of swap is ₹5,00,000,

(i) Calculate Semi-Annual fixed payment.

(ii) Find the first floating rate payment for (i) above if the six month period from the effective date of swap to the settlement date comprises 183 days and that the corresponding LIBOR was 6% on the effective date of swap.

(iii) In (ii) above, if settlement is on 'Net' basis, how much the fixed rate payer would pay to the floating rate payer?

Generic swap is based on 30/360 days basis. [marks 6]

Answer: 5

5 (a) (i)Computation of Existing Portfolio:

Security	Market value of Security (₹ In Lakhs)		Proportion	Beta of the Security	Weighted Beta
1	1 × 400	= 400	4/13	1.1	4/13×1.1=0.34
2	2 × 300	=600	6/13	1.2	6/13×1.2 = 0.55
3	3 × 100	= 300	3/13	1.3	3/13×1.3 = 0.30
Total		1,300			1.19

Value per Futures Contract = Index Price per unit × Lot size per Futures contract

= ₹ 1352×100 = ₹ 1,35,200.

Activity to reduce portfolio beta to 0.8 :

Object: Reduce portfolio beta ; Activity : Sell Index Futures;

Beta of existing portfolio = β_E= 1.19; Desired Beta of new portfolio = β_N = 0.8

Contract size = 100 units. Value per Futures Contract in Nifty = V_F = ₹ 1,35,200.

Value of the portfolio = V_P = ₹ 1,300 lakhs.

No. of Futures Contract to be sold

= Portfolio Beta × [Beta of the portfolio - Desired value of Beta] / Value of Futures contract

= $V_P \times [(\beta_E - \beta_N) / V_F]$ = ₹ 1,300 lakhs × [(1.19-0.80)/₹ 1,35,200]

= ₹ 1,300lakhs × [(0.39)/ ₹ 1.352 lakhs] = 1,300 × 0.2884615 = 374. 998 = **375 Contracts.**

Activity to increase portfolio beta to 1.5 :
Object: Increase portfolio beta; Activity : Buy Index Futures.
Beta of existing portfolio = (β_E =1.19; Desired beta of new portfolio = β_N = 1.5
No. of Futures Contract to be bought
= $V_P \times [(\beta_E - \beta_N)/ V_F]$ = ₹ 1300 lakhs × [(1.50 - 1.19) / ₹ 1,35,200]
= 1,300 lakhs ×[0.31 / ₹ 1.352 lakhs]
= 1,300 × 0.2292899 = 298.0769 = 298 Contracts.

(ii) Based on put call parity theorem,

C- P = S – PV (EP) or, C = P + S – PV(EP).

Thus, C (call) = 6.82 + 70- 75 × 0.9709

= 76.82 – 72.82 = ₹4.00

Thus, Price of Six month call = ₹4.00

(b) Computation of Factors

Factor	Notation	Value
Notional Principal	P	5,00,000
Time	N	180 days
All in Cost Rate	R	0.08

(i) Computation of Semi Annual Fixed Rate Payment

Semi-Annual Fixed Rate Payment = P × (N ÷ 360) X R

= 5,00,000 ×(180 ÷ 360) × 0.08

= 5,00,000 × 0.5 × 0.08 = ₹20,000/-

(ii) Computation of Floating Rate Payment

Floating Rate Payment = P × (N ÷ 360) × LIBOR
Where N = Period from the effective date of SWAP to the date of Settlement
= 5,00,000 × (183 ÷ 360) × 0.06
= 5,00,000 × (0.5083) × 0.06 = ₹15,250.

(iii) Computation of Net Amount

Net Amount to be paid by the Person Requiring Fixed Rate Payment = Fixed Rate Payment Less Floating Rating Payment = ₹20,000 - ₹15,250 = ₹4,750.

6 (a) (i) An Indian exporter has sold handicrafts items to an American business house. The exporter will be receiving US$ 1, 00,000 in 90 days. Premium for a dollar put option with a strike price of ₹48 and a 90 days settlement is ₹1. The exporter anticipates the spot rate after 90 days to be ₹46.50.

(I) Should the exporter hedge its account receivable in the option market?

(II) If the exporter is anticipating the spot rate to be ₹47.50 or ₹48.50 after 90 days, how would it effect the exporter's decision?

(ii) In the inter-bank market, the DM is quoting ₹21.50. If the bank charges 0.125% commission for TT selling and 0.15% for TT buying, what rate should it quote?

[6+2 marks]

6 (b) An Indian exporting firm, Rohit and Bros., would be covering itself against a likely depreciation of pound sterling. The following data is given:

Receivables of Rohit and Bros	**£ 5, 00,000**
Spot rate	**₹56.00/£**
Payment date	**3 months**
3 months interest rate	**India: 12% per annum**
	UK : 5% per annum

[8 marks]

Answer: 6

6 (a) (i) The Indian exporter will be buying a put option on the US $ to hedge against depreciation in the US $.

For Settlement price of ₹ 46.50/US $

Option	PUT
Strike	₹ 48/US $
Premium	1/US $
Settlement (Expiration) Rate	46.50

Benefit from put option:

= Max [(Strike rate – Expiration rate), 0] – Premium.

= Max [₹ 48/US $ - ₹ 46.50/US $), 0] – ₹ 1/US $ = ₹ 0.50/US $

As there is benefit in owning the put, so the exporter should hedge using the put option.

Here, if exporter remains unhedged, it will receive ₹ 4650000 [₹46.50/US $ × US $ 100000]. But with hedging, using put option, the exporter receives at the end 90 days. ₹ 4700000 [₹ 48/US $ × US $ 100000 – ₹1/US $×US 100000]

For settlement price of ₹ 47.50/US $:

Benefit from put option = Max [(₹ 48/US $ - ₹ 47.50/US $), 0] – ₹ 1/US $ = (₹ 50/US $) (Negative)

For settlement price of ₹ 48.50/US $:

Benefit from Put option = Max [(₹48/US $ - ₹48.50/US $ 0] – ₹1/US $

= 0 – ₹ 1/US $ = (₹ 1/US $) (Negative).

So, for anticipated price of ₹ 47.50/US $ or ₹48.50/US $, the exporter will not be hedging through a put option as that does not have positive benefit.

(ii) TT selling rate = 21.50 (1 – 0.00125) = ₹ 21.47/DM

TT buying rate = 21.50 (1 – 0.00150) = ₹ 21.53/DM

6 (b) The only thing left is Rohit and Bros. to cover the risk in the money market. The following steps are required to be taken:

Step1 Borrow pound sterling for 3 months. The borrowing has to be such that at the end of three months, the amount becomes £ 5, 00,000. Say, the amount borrowed is £ x. Therefore,

$$x\left[1+0.05\times\frac{3}{12}\right]=5,00,000 \quad \text{or} \quad x=£\,4,93,827$$

Step 2 Convert the borrowed sum into rupees at the spot rate.

This gives: £ 4, 93,827 × ₹ 56 = ₹ 27,654,312

Step3 The sum thus obtained is placed in the money market at 12 per cent to obtain at the end of 3 months:

$$S=₹\,27,654,312\times\left[1+0.12\times\frac{3}{12}\right]=₹\,28,483,941$$

Step4 The sum of £ 5, 00,000 received from the client at the end of 3 moths is used to refund the loan taken earlier.

From the calculations it is clear that the money market operation has resulted into a net gain of ₹ 483,941 (i.e. 28,483,941 – 5, 00,000 × 56).

If pound sterling has depreciated in the meantime, the gain would be even bigger.

7 (a) Beta Ltd is considering the acquisition of a personal computer costing ₹ 50,000. The effective life of the computer is expected to be five year. The company plans to acquire the same either by borrowing ₹ 50,000 from its bankers at 15% interest p.a. or on lease. The company wishes to know the lease rentals to be paid annually, which match the loan option. The following further information is provided to you:

(i) The principal amount of loan will be paid in five annual equal installments.

(ii) Interest, lease rentals, principal repayment are to be paid on the last day of each year.

(iii) The full cost of the computer will be written off over the effective life of computer on a straight-line basis and the same will be allowed for tax purposes

(iv) The company's effective tax rate is 40% and the after-tax cost of capital is 9%

(v) The computer will be sold for ₹ 1,700 at the end of the 5th Year. The commission on such sales is 9% on the sale value.

You are required to compute the annual lease rentals payable by Beta Ltd, which will result in indifference to the loan option. [marks 8]

7 (b) Indira ammusement park charges ₹200 each for all rides in the park. Variable costs amount to ₹ 50 per ride and fixed costs arc ₹120 Lakhs. Last year's net income was ₹ 90 Lakhs on sale of ₹280 Lakhs. This year, management expects a cost increase of 20% in variable costs and 10% in fixed costs. To help offset these increases, the management is considering raising the price of a ride to ₹250.

Required:

(i) How many rides did this park sell last year?

(ii) If the price increase is not implemented, what is the expected net income for this year assuming the same volume of activity?

(iii) Compute the price indifference point for the new ride price.

(iv) Compute the Break-even point for this year using the old price and the new price.

[8 marks]

Answers: 7

7(a) **Computation of Net Cash outflow if the Asset is Purchased by Borrowing**

Year	Principal repayment	Interest	Installment	Tax savings on interest	Tax savings on dep	Net cash out flow	PV @ 9%	Present value
1	10000	7500	17500	3000	4000	10500	0.91743	9633
2	10000	6000	16000	2400	4000	9600	0.84168	8080
3	10000	4500	14500	1800	4000	8700	0.77218	6718
4	10000	3000	13000	1200	4000	7800	0.70843	5526
5	10000	1500	11500	600	4000	6900	0.64993	4485

Present Value of Total out flow
= 34,442

Less: Present value of terminal cash inflows

Sale value of asset	1700
(-) Commission	153
	1547
(-)Tax on profit @ 40%	619
	928
Its Present value (928 x 0.64993)	603
Net cash out flow	**33,839**

Since we are required to find the annual lease rental payable , which will result in indifference to loan option. The present value of net cash out flow will be the same in each case.

Computation of break even lease rent :

Let x be the break even lease rent

Present value of cash out flow	
Lease rent	x
(-) Tax saving (x @ 40%)	0.4x
Lease rent after tax per year	0.6x

Present value of lease rental for five years = (0.6x) x (3.8897) = 33,839

x = ₹14,500 .

7(b) (i) Rides which INDIRA AMUSEMENT PARK sold last year:

= Total sales of rides last year / Charges per ride last year = ₹ 2,80,00,000 / ₹ 200

= 1,40,000 rides.

(ii) Expected net income:

Charges per ride	₹200
Less: Expected variable cost per ride [₹ 50 + ₹ 10]	₹60
Contribution per ride	₹140
No. of rides (same as last year)	1,40,000
Total expected contribution	₹1,96,00,000
Less : Expected fixed cost [1,20,00,000 + 10 %]	₹1,32,00,000
Expected net income	₹64,00,000

(iii) Price indifference point for the new ride price:
Price indifference point is at which the expected profit remains the same irrespective of sale

Price and Costs	₹
New ride price	250
Less: Variable cost	60
Contribution per ride	190
Fixed cost of this year [A]	1,32,00,000
Net income last year [B]	90,00,000
Contribution required [A + B]	2,22,00,000

Price indifference point = ₹ 2,22,00,000 / ₹ 190 = 1,16,842 rides.

(iv) Break-even point for this year using the old price and the new price: Break-even point = Fixed costs / Contribution per ride

At old price = ₹1,32,00,000 /₹ [200 - 60] = 94,286 rides

At new price = ₹ 1,32,00,000 / ₹ [250 - 60] = 69,474 rides.

(8) Answer any four questions: [marks 4*4]

(i) (i)What are the principle weaknesses of Indian Stock Market?

(ii) Write short note — Multi-Commodity Exchange of India Limited (MCX)

(iii) Does interest rate parity imply that interest rates are the same in all countries?

(iv) Discuss any 4 statutory functions of IRDA.

(v) Write short note on ECB.

Answer: 8

8 (i) The principle weaknesses of Indian Stock Market are enumerated below:

(1) Scarcity of floating stock: Financial Institutions, banks and insurance companies own 80% of the equity capital of the private sector.

(2) Speculation: 80% of the transactions on the NSE and BSE are speculative in nature.

(3) Price rigging: Evident in relatively unknown and low quality scripts-causes short-term functions in the price.

(4) Insider trading: obtaining market sensitive information to make money in the markets.

(ii) Multi-Commodity Exchange of India Limited (MCX)

MCX an independent and de-mutulized multi commodity exchange has permanent recognition from Government of India for facilitating online trading, clearing and settlement operations for commodity futures markets across the country. Key shareholders of MCX are Financial Technologies (India) Ltd., State Bank of India, NABARD, NSE, HDFC Bank, State Bank of Indore, State Bank of Hyderabad, State Bank of Saurashtra, SBI Life Insurance Co. Ltd., Union Bank of India, Bank Of India, Bank Of Baroda, Canara Bank, Corporation Bank.

Headquartered in Mumbai, MCX is led by an expert management team with deep domain knowledge of the commodity futures markets. Through the integration of dedicated

resources, robust technology and scalable infrastructure, since inception MCX has recorded many first to its credit.

Inaugurated in November 2003 by Shri Mukesh Ambani, Chairman & Managing Director, Reliance Industries Ltd, MCX offers futures trading in the following commodity categories: Agri Commodities, Bullion, Metals- Ferrous & Non-ferrous, Pulses, Oils & Oilseeds, Energy, Plantations, Spices and other soft commodities.

(iii) No, interest rate parity implies that an investment in the U.S. with the same risk as a similar investment in a foreign country should have the same return. Interest rate parity is expressed as:

$$\frac{\text{For ward Rate}}{\text{Spot Rate}} = \frac{1+ (\text{Interest Rate in Home Country})}{1 + (\text{Interest Rate in Foriegn Country})}$$

Interest rate parity shows why a particular currency might be at a forward premium or discount. A currency is at a forward premium whenever domestic interest rates are higher than foreign interest rates. Discounts prevail if domestic interest rates are lower than foreign interest rates. If these conditions do not hold, then arbitrage will soon force interest rates back to parity.

(iv) Statutory functions of IRDAare as follows:

- Issue to the applicant a certificate of registration, renew, modify, withdraw, suspend or cancel such registration
- Protection of the interests of the policyholders in matters concerning assigning of policy, nomination by policy holders, insurable interest, settlement of insurance claim, surrender value of policy and other terms and conditions of contracts of insurance
- Specifying requisite qualifications, code of conduct and practical training for intermediaries or insurance Intermediaries and agents
- Specifying the code of conduct for surveyors and loss assessorsϖ

(v) External Commercial Borrowings (ECB): These include raising finance from international markets for plant and machinery imports. Funds can be raised subject to the terms and conditions stipulated by the Government of India, which imposes restrictions on the amount raised under automatic route. Funds raised above the stipulated limit would require the prior approval of the Ministry of Finance.

Types of ECB: External Commercial Borrowings include Bank Loans, Supplier's and Buyer's credit, fixed and floating rate bonds and Borrowing from private sector windows of Multilateral Financial
Institutions such as International Finance Corporation.