STRATEGIC FINANCIAL MANAGEMENT

Time Allowed: 3 Hours **Full Marks: 100**

The figures in the margin on the right side indicate full marks.

SECTION – A (Compulsory)

1. Choose the correct option: **[15 x 2 = 30]**

(i) The Profitability Index of a project is 1.28 and its cost of investment is ₹2,50,000. The NPV of the project is _____

(a) ₹75,000
(b) ₹80,000
(c) ₹70,000
(d) ₹65,000

(ii) The type of lease that includes a third party, a lender, is called as which of the following?

(a) Sale and leaseback
(b) Leveraged Lease
(c) Direct leasing arrangement
(d) Operating lease

(iii) If Annual CFAT is ₹5,40,000, Project life is 4 years and initial cost is ₹19,80,000, what is the Payback Profitability of the project?

(a) ₹1,60,000
(b) ₹1,95,000
(c) ₹1,80,000
(d) ₹1,20,000

(iv) In securitization who is the issue of securities?

(a) SPV
(b) Underwriter
(c) Depositor
(d) Insurer

(v) High growth rates in earnings and market share are characteristics of companies which are in

(a) Maturity stage
(b) Expansion stage
(c) Pioneering stage
(d) Declining stage

(vi) It was observed that in a certain month, 6 out of 10 leading indicators and moved up as compared to 4 indicators in the previous month. The diffusion index for the months was

(a) 20%
(b) 40%
(c) 60%
(d) 80%

(vii) The definition "the promised compounded rate of return an investor will receive from a bond purchased at the current market price and held to maturity" pertains to

(a) Yield to maturity
(b) Realized yield
(c) Current yield
(d) Yield to call

(viii) A stock with a dividend pay-out ratio of 45%, required rate of return is 15% and a constant growth rate of 10% will have a P/E ratio of

(a) 3 times
(b) 9 times
(c) 8 times
(d) 7.5 times

(ix) Which among the following increases the NAV of a mutual fund scheme?

(a) Value of investments
(b) Receivables
(c) Accrued income
(d) All of (a), (b) and (c)

(x) A mutual fund had average daily assets of ₹500 million in the past year. During the year, the fund sold ₹60 million of stock X and purchased ₹90 million of stock Y. What was the fund's turnover ratio?

(a) 12%
(b) 15%
(c) 18%
(d) 30%

(xi) A portfolio manager realized an average annual return of 10%. The beta of the portfolio is 0.8 and the standard deviation of returns is 20%. The average annual return for the market index is 12% and the standard deviation of the market returns is 25%. The rf rate is 3%. Calculate the Treynor ratio.

(a) 7.00
(b) 8.75
(c) 11.25
(d) 12.50

(xii) An investor is bullish about X Ltd. which trades in the spot market at ₹1,150. He buys two call option contracts with three months (one contract is 100 shares) with a strike price of ₹1,195 at a premium of ₹35 per share. Three months later, the share is selling at ₹1,240. Net profit/loss of the investor on the position will be

(a) ₹1,000
(b) ₹16,000
(c) ₹11,000
(d) ₹2,000

(xiii) Shibosai bond is a bond

(a) Denominated in ¥ and issued outside Japan
(b) Denominated in a currency other than ¥ and issued in Japan
(c) Denominated in Japanese ¥ and issued under private placement in Japan
(d) Denominated in ¥ and issued by a overseas corporate to the public in Japan

(xiv) A wants to hedge its portfolio of shares worth ₹150 million using the Index futures. The contract size is 100 times the index. The index is currently quoted at 7500. The beta of the portfolio is 0.9. Consider the beta of the index as 1. The number of contracts to be traded is

(a) 18,000
(b) 180
(c) 22
(d) 200

(xv) The following various currency quotes are available from a leading Indian Bank:
₹/£: ₹75.31/75.33
£/$: £0.6391/0.6398
$/¥: $0.01048/0.01052
The rate at which yen (¥) can be purchased with rupees will be

(a) ₹0.5070
(b) ₹1.5030
(c) ₹1.7230
(d) None of the above

Answer:

(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)	(viii)	(ix)	(x)	(xi)	(xii)	(xiii)	(xiv)	(xv)
c	b	c	a	b	c	a	b	d	a	b	d	c	b	a

SECTION – B

(Answer any five questions out of seven questions given. Each question carries 14 marks.)

[5 x 14 = 70]

2. (a) S Engineering Company is considering to replace or repair a particular machine, which has just broken down. Last year this machine costed ₹2,00,000 to run and maintain. These costs have been increasing in real terms in recent years with the age of the machine. A further useful life of 5 years is expected, if immediate repairs of ₹1,90,000 are carried out. If the machine is not repaired it can be sold immediately to realize about ₹50,000 (Ignore loss/gain on such disposal).

Alternatively, the company can buy a new machine for ₹4,90,000 with an expected life of 10 years with no salvage value after providing depreciation on straight line basis. In this case, running and maintenance costs will reduce to ₹1,40,000 each year and are not expected to increase much in real term for a few years at least. S Engineering Company regard a normal return of 10% p.a. after tax as a minimum requirement on any new investment. Considering capital budgeting techniques, which alternative would you advise choosing, and why? Take corporate tax rate of 50% and assume that depreciation on straight line basis will be accepted for tax purposes also. Given cumulative present value of ₹1 p.a. at 10% for 5 years ₹3.791, 10 years ₹6.145.

[7]

(b) Fair finance, a leasing company, has been approached by a prospective customer intending to acquire a machine whose Cash Down price is ₹3 crores. The customer, in order to leverage his tax position, has requested a 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 straight line basis and Fair Finance's marginal tax rate is 35%. The target rate of return for Fair Finance on the transaction is 12%.

Calculate the lease rents to be quoted for the lease for three years. **[7]**

Answer:

(a)

Evaluation of proposal to repair existing machine or buy a new machine for M/s S. Engineering Company

(i) To repair existing machine:

Particulars	Amount (₹)
Present value of after-tax cash outflows	
Cost of repairs immediately net of tax 95,000 (50% of 1,90,000)	
Equivalent annual cost for 5 years = $\frac{95,000}{3.791}$	25,059
Running and maintenance cost per annum net of tax (50% of 2,00,000)	1,00,000
Total net equivalent cash outflows p.a.	1,25,059

(ii) To buy a new machine:

Particulars	Amount (₹)
Present value of after-tax cash outflows	
Purchase cost of new machine	4,90,000
Less: Sale Proceeds of old machine	50,000
	4,40,000
Equivalent annual cost for 10 years = $\frac{4,40,000}{6.145}$	71,603
Tax saving of depreciation (4,90,000/10) × 50%	(24,500)
Running and maintenance cost p.a. net of tax (50% of 1,40,000)	70,000
Total net equivalent cash outflows p.a.	1,17,103

Since, net equivalent cash outflows p.a. for buying a new machine ₹1,17,103 is less than net equivalent cash outflows of ₹1,25,059 for repairing of an existing machine. Therefore, it is advisable that the company should go for buying a new machine.

Alternative Solution:

i. To repair existing machine:

Particulars	Amount (₹)
Present value of after-tax cash outflows	
Cost of repairs immediately net of tax (50% of 1,90,000)	95,000
Running and maintenance cost for 5 years (50% × 2,00,000 × 3.791)	3,79,100
Total net present value of after-tax cash outflows for 5 years	4,74,100
Hence, net equivalent cash outflows p.a. = 4,74,100/3.791	1,25,059

ii. To buy a new machine:

Particulars	Amount (₹)	Amount (₹)
Present value of after-tax cash outflows		
Purchase cost of new machine	4,90,000	
Less: Sale proceeds of old machine	50,000	4,40,000
Tax benefit on depreciation p.a. (4,90,000/10) × 50%	(24,500)	
Running and maintenance cost p.a. (50% of 1,40,000)	70,000	
	45,500	
Net cash outflows for 10 years (45,500 × 6.145)		2,79,598
Total net present value of after-tax cash outflows for 10 years		7,19,598
Hence, net equivalent cash outflow p.a. = 7,19,598/6.145		1,17,103

Since, net equivalent cash outflows p.a. for buying a new machine ₹1,17,103 is less than net equivalent outflows of ₹1,25,509 for repairing of an existing machine. Therefore, it is advisable that the company should go for buying a new machine.

(b) Capital sum to be placed under Lease

Particulars	₹ in lakhs
Cash Down price of machine	300.00
Less: PV of depreciation tax shield [100 × 0.35 × PVIFA (12%, 3 years) = 35 × 2.4018]	84.06
	215.94

If the normal annual lease rent per annum is x, then cash flow will be:

Year	Post-tax cash flow	P.V. of post-tax cash flow
1	3x × (1 – .35) = 1.95x	1.95 × (1/1.12) = 1.7411x
2	2x × (1 – .35) = 1.3x	1.30 × $[(1/(1.12)^2]$ = 1.0364x
3	x × (1 – .35) = 0.65x	0.65 × $[1/(1.12)^3]$ = 0.4626x
		= 3.2401x

Therefore 3.2401x = 215.94
or, x = ₹66.6409 lakhs

Year-wise rentals are as follows: (₹in lakhs)

Year 1	3 × 66.6409 lakhs	199.9227
Year 2	2 × 66.6409 lakhs	133.2818
Year 3	1 × 66.6409 lakhs	66.6409

3. (a) The Globe Manufacturing Company Ltd. is considering an investment in one of the two mutually exclusive proposals – Projects X and Y, which require cash outlays of ₹3,40,000 and ₹3,30,000 respectively. The certainty-equivalent (C.E.) approach is used in incorporating risk in capital budgeting decisions. The current yield on government bond is 10% and this be used as the riskless rate. The expected net cash flows and their certainty-equivalents are as follows:

	Project X		Project Y	
Year-end	**Cash flow (₹)**	**C.E**	**Cash flow (₹)**	**C.E**
1	**1,80,000**	**0.8**	**1,80,000**	**0.9**
2	**2,00,000**	**0.7**	**1,80,000**	**0.8**
3	**2,00,000**	**0.5**	**2,00,000**	**0.7**

Present value factors of ₹1 discounted at 10% at the end of year 1, 2 and 3 are 0.9091, 0.8264 and 0.7513 respectively.

Required:

(i) Examine which project should be accepted.

(ii) Discuss, with reasons, which project should be analysed using a higher risk-adjusted discount rate. **[7]**

(b) AB Ltd. is expected to pay a dividend of ₹4.00 at the end of first year, a dividend of ₹7.00 at the end of second year, a dividend of ₹11.00 at the end of 3rd year. From 4th year onwards, the dividends are expected to grow at a constant growth rate of 4%. If the required rate of return is 14%, compute the present value of the stock. **[7]**

Answer:

(a)

i. Statement showing Net Present Value of Project X

Year-end	Cash flow (₹)	C.E	Adjusted Cash flow (₹)	Present value factor at 10%	Total present value (₹)
	(a)	(b)	(c) = (a) × (b)	(d)	(e) = (c)× (d)
1	1,80,000	0.8	1,44,000	0.9091	1,30,910
2	2,00,000	0.7	1,40,000	0.8264	1,15,696
3	2,00,000	0.5	1,00,000	0.7513	75,130
					3,21,736
Less: Initial investment					3,40,000
Net Present Value					(18,264)

Statement showing the Net Present Value of Project Y

Year-end	Cash flow (₹)	C.E	Adjusted Cash flow (₹)	Present value factor at 10%	Total present value (₹)
	(a)	(b)	(c) = (a) × (b)	(d)	(e) = (c)× (d)
1	1,80,000	0.9	1,62,000	0.9091	1,47,274
2	1,80,000	0.8	1,44,000	0.8264	1,19,002
3	2,00,000	0.7	1,40,000	0.7513	1,05,182
					3,71,458
Less: Initial investment					3,30,000
Net Present Value					41,458

Decision: Since the net present value of project Y is positive, the project Y should be accepted.

ii. Since the certainty-equivalent (C.E.) Co-efficient of project X is lower than project Y, project X is riskier than project Y. Therefore, if risk adjusted discount rate method is used then project X would be analysed with a higher rate.

(b) $P_0 = \frac{D_1}{1+k} + \frac{D_2}{1+k^2} + \frac{D_3}{1+k^3} + \frac{D_3(1+g)}{(1+k)^3(k-g)}$

Substituting these values:

$P_0 = \frac{4}{1.14} + \frac{7}{(1.14)^2} + \frac{11}{(1.14)^3} + \frac{11.44}{(1.14)^3(0.14-0.04)}$

= 3.509 + 5.39 + 7.415 + 77.22

= ₹93.54

Therefore, the price of the share is ₹93.54 through DDM (dividend discount model).

4. (a) Calculate the Yield to Maturity of a ₹1,000 zero-coupon bond maturing in 10 years, issued at ₹190. **[7]**

(b) A mutual fund having 300 units has shown its NAV of ₹8.75 and ₹9.45 at the beginning and the end of the year respectively. The Mutual fund has given two options to the investors:
(i) Get dividend of ₹0.75 per unit and capital gain of ₹0.60 per unit, or
(ii) These distributions are to be reinvested at an average NAV of ₹8.65 per unit.
Examine the difference in returns available between the options, and discuss with reasons which option would be preferable for investors. **[7]**

Answer:

(a)

- Present value of ₹1,000 to be received after 10 years ₹190.
- PV of ₹1 to be received after 10 years = 0.19.
- Consulting the PVF table, we find that the rate of interest in this case is in the range of 18% to 19%.
- NPV at 18% = -190 + (1000 × 0.191) = + 1
- As NPV (at 18%) is positive, this shows that the return is greater than 18%.

Let's calculate NPV at 19%.

- NPV at 19% = -190+ (1000 × 0.176) = - 14
- As NPV (at 19%) is negative, this shows that the return is less than 19%.

We can find the exact return (called YTM, also called current interest rate) through interpolation.

YTM or current interest rate:

$= \text{Lower rate} + \frac{Lower\ rate\ NPV}{(Lower\ rate\ NPV - Higher\ rate\ NPV)} \times \text{(difference in rates)}$

$= 18 + \frac{1}{1-(-14)} \times 1 \quad = 18.066\%$

(b) **Option 1**: When Dividend and Capital Gain are paid:

Calculation of monthly return on the mutual funds:

$$r = \frac{(NAV_1 - NAV_0) + Distribution}{NAV_0}$$

$$= \frac{(₹9.45 - ₹8.75) + (₹0.75 + ₹0.60)}{8.75}$$

$$= \frac{0.70+1.35}{8.75}$$

= 23.43%

Option 2: When Dividend and Capital gain are reinvested:

If all dividends and capital gain reinvested into additional units are ₹8.65 per unit, the position would be

Total amount reinvested = ₹1.35 × 300 = ₹405

Additional units added = $\frac{₹405}{8.65}$ = 46.82 units or 47 units

Value of units at the end = 346.82 units × ₹9.45 = ₹3,277.45

Or = 347 units × ₹9.45 = ₹3,279.15

Price paid for 300 units as the beginning = (300 × 8.75) = ₹2,625

Return = (₹3,277.45 – ₹2,625) / ₹2,625 = 24.86%

Or Return = (₹3,279.15 - ₹2,625)/ (₹2,625) = (₹654.15)/ (₹2,625) = 24.92%

From the above, it can be said the reinvestment option is better.

5. (a) **Returns on two portfolios, B and L, for the past 4 years are —**

Year	1	2	3	4
Portfolio B	13.00%	13.5%	12.5%	14.00%
Portfolio L	14.35%	11.75%	13.60%	12.90%

Beta factor of the two portfolios are 1.3 and 1.2 respectively. If the market portfolio fetches 12% return and RBI Bonds, which are considered risk free, yield 5% return, advise which of the above two portfolios will an investor prefer.

[7]

(b) A mutual fund starts the year with ₹50 million. By 1st year it has appreciated to ₹60 million, at which point it receives cash amounting to ₹20. In the second year, the fund appreciates by another 50%.
(i) Calculate Annual MWROR.
(ii) Calculate Annual TWROR.
(iii) If the fund has a 1st year cash outflow of ₹20 million rather than an inflow, calculate the impact on the Time-Weighted Rate of Return (TWROR) and explain whether it would increase or decrease.

[7]

Answer:

(a)

1. Computation of Expected Rate of Return under CAPM

$E(R_X)$ — $R_F + [\beta_X \times (R_M - R_F)]$ [Expected Return on Portfolio X]
Risk Free Return — R_F = 5% [Treasury Bills]
Return on Market Portfolio — R_M = 12% [Given]

Expected Return on	Portfolio B	Portfolio L
Beta Factor	1.30	1.20
Expected Return	$E(R_B) = R_F + [\beta_B \times (R_M - R_F)]$ $= 5\% + [1.30 \times (12\% - 5\%)]$ $= 5\% + [1.30 \times 7\%]$ $= 5\% + 9.1\% = 14.10\%$	$E(R_L) = R_F + [\beta_L \times (R_M - R_F)]$ $= 5\% + [1.20 \times (12\% - 5\%)]$ $= 5\% + [1.20 \times 7\%]$ $= 5\% + 8.4\% = 13.40\%$

2. Computation of Alpha Factors

Year	**Portfolio B**		**Portfolio L**	
	Actual Return	Abnormal Return [AR_B]	Actual Return	Abnormal Return [AR_L]
(1)	(2)	(3) = (2) - $E(R_B)$	(4)	(5) = (4)- $E(R_L)$
1	13.00%	13.00% - 14.10% = (1.10%)	14.35%	14.35% - 13.40% = 0.95%
2	13.5%	13.50% - 14.10% = (0.60%)	11.75%	11.75% - 13.40% = (1.65%)
3	12.5%	12.50% -14.10% = (1.60%)	13.60%	13.60% - 13.40% = 0.20%
4	14.00%	14.00% -14.10% = (0.10%)	12.90%	12.90% - 13.40% = (0.50%)
		(3.40%)		**(1.00%)**

Alpha Factor:

Portfolio B $\propto_B = \sum AR_B \div n = [(3.40\%) \div 4 \text{ Years}] = (0.85\%)$
Portfolio L $\propto_L = \sum AR_L \div n = [(1.00\%) \div 4 \text{ Years}] = (0.25\%)$

3. Expected Return adjusted for Alpha

Alpha Adjusted Return = Return under CAPM + $\propto$
Portfolio B = $E(R_B) + \propto_B$ = 14.10% - 0.85% = 13.25%
Portfolio L = $E(R_L) + \propto_L$ = 13.40% - 0.25% = 13.15%
Conclusion: The Alpha for Security B is higher than L, indicating its better performance relative to L. Hence, an investor should prefer Portfolio B.

(b)

The data has been provided -

Time (Years)	Market Value of Fund	Cash Flows (Net)
0	50	0
1	60	20
2	120	-

(i) Calculation of MWROR:

$\Rightarrow F_0(1+i)^T + c_{t_1}\ (1+i)^{T-t_1} = F_T$

$\Rightarrow 50(1+i)^2 + 20(1+i)^1 = 120$

By using the iterative process and substituting different values for 'i', it is found that 'i' lies between 35% and 37%. By using the technique of interpolation, it is found that the true value of 'i' is 36.2%. Hence, the MWROR for the fund is 36.2%.

(ii) Calculation of TWROR:

$$\text{TWROR or } i = \left[\frac{F_{t_1}}{F_{t_0}+C_{t_0}} \times \frac{F_{t_2}}{F_{t_1}+C_{t_1}}\right]^{1/2} - 1$$

$i = [(60/50) \times (120/80)]^{1/2} - 1$

Solving i = 34.1%

(iii) In case 1st year outflow is there, instead of an inflow, then

TWROR or $i = [(60/50) \times (120/40)]^{1/2} - 1$

Solving i = 89.74%

Thus, the outflow increases the TWROR

6. (a) The price of Compact Stock of a face value of ₹10 on 31st December, 2024 was ₹414 and the futures price on the same stock on the same date i.e., 31st December, 2024 for March, 2025 was ₹444. Other features of the contract and the related information are as follows:

- **Time to expiration 3 months (0.25 year)**
- **Annual dividend on the stock of 30% payable before 31.3.2025.**
- **Borrowing Rate is 20 % p.a.**

Based on the above information, calculate future price for Compact Stock on 31st December, 2024. Also examine whether any arbitrage opportunity exists or not.

[7]

(b) Sundar Ramalingam had entered into 5 Put Options and 5 Call Options in different securities, the particulars of which are given below, along with their exercise price and actual market price on the date of exercise-

Call Options		
Security	**Exercise Price (₹)**	**Actual Market Price (₹)**
P	**370**	**376**
Q	**450**	**444**
R	**1790**	**1700**
S	**135**	**140**
T	**953**	**953**

Put Options		
Security	**Exercise Price (₹)**	**Actual Market Price (₹)**
A	**118**	**122**
B	**758**	**758**
C	**350**	**340**
D	**65**	**69**
E	**230**	**220**

Discuss the investor's position on the date of option exercise, and advise on the most appropriate course of action based on market conditions. **[7]**

Answer:

(a) Calculation of Future Price

Particulars	Remarks
Spot Price [S_0]	₹414
Expected rate of Dividend [y]	30% or 0.30
Borrowing Rate	20%
Tenor / Time Period [t] in Years	3 Months or 0.25 Year
Present Value of Dividend [I]	= (30% × 10) × $e^{-0.20\times0.25}$
	= (30% × 10) ÷ 1.05127
	= 3 ÷ 1.05127 = 2.8537
Adjusted Spot Price [Spot Price- Present Value of Dividend] [S0– I]	= 414 - 2.8537 = ₹ 411.1463
Theoretical Forward Price [TFP] TFP = [S_0 – I] × $e^{(r-y)\times t}$	= ₹411.1463 × $e^{0.20\times0.25}$
	= ₹411.1463 × $e^{0.05}$
	= ₹ 411.1463×1.05127 = ₹ 432.23
3-Months Futures Contract Rate [AFP]	₹ 444
TFP Vs. AFP	AFP is Higher
Inference	AFP is overvalued
Recommended Action	Buy Spot. Sell Future.

Cash Flows to Gain on the Arbitrage Opportunity

Activity Flow:

(a) Borrow ₹414 for a period of 3 months at the rate of 20% p.a.

(b) Buy the Stock at ₹414 at T_0

(c) Receive the Dividend at the time of 3 months [₹10 × 30% = ₹3].

(d) Sell the Index Futures at the Forward Price at the end of 3 months [₹444].

(e) Repay the amount of Loan with Interest at the end of the period.

Cash Flows arising out of the activities to gain on the Arbitrage:

S.L No.	Particulars	₹
a	Borrow for a period of 3 months and Buy Stock at T_0	414
b	Receive the Dividend at the end of 3 months	3
c	Sell the Futures at the Forward Price at the end of 3 months	444
d	Repay the amount of borrowing together with Interest = [414 $\times e^{0.20\times0.25}$]	(435.23)
e	Net Cash Inflow [(b + c) – d]	11.77

(b) 1. Put Options [Right to Sell]

Security	Exercise Price (EP) (₹)	Actual Market Price (AMP) (₹)	AMP vs. EP [Higher]	Position	Action
A	118	122	AMP	Out of Money	Lapse
B	758	758	Equal	At the Money	No Action
C	350	340	EP	In the Money	Exercise
D	65	69	AMP	Out of Money	Lapse
E	230	220	EP	In the Money	Exercise

2. Call Option [Right to Buy]

Security	Exercise Price (EP) (₹)	Actual Market Price (AMP) (₹)	AMP vs. EP [Higher]	Position	Action
P	370	376	AMP	In the Money	Exercise
Q	450	444	EP	Out of Money	Lapse
R	1790	1700	EP	Out of Money	Lapse
S	135	140	AMP	In the Money	Exercise
T	953	953	Equal	At the Money	No Action

7. (a) Following are the details of cash inflows and outflows in foreign currency denominations of M Co., an Indian export firm, which have no foreign subsidiaries —

Currency	Inflow	Outflow	Spot rate	Forward rate
US $	**4,00,00,000**	**2,00,00,000**	**48.01**	**48.82**
French Franc (F Fr)	**2,00,00,000**	**80,00,000**	**7.45**	**8.12**
UK £	**3,00,00,000**	**2,00,00,000**	**75.57**	**75.98**
Japanese Yen	**1,50,00,000**	**2,50,00,000**	**3.20**	**2.40**

(1) Determine the net exposure of each foreign currency in terms of Rupees.
(2) Discuss whether any of the exposure positions are offsetting to some extent.

[7]

(b) Suppose, the interest rate on pound sterling is 12% p.a. in London and interest rate on a comparable dollar investment in New York is 7% p.a. The pound sterling spot rate is $1.95/£ and one year forward rate is $1.87/£. Examine, is there any arbitrage opportunity exists. If so, discuss the steps to earn arbitrage profit.

[7]

Answer:

(a) 1. Computation of Net Exposure

Particulars	US $	French Franc (F Fr)	UK £	Japanese Yen
Inflow (in Lakhs)	400	200	300	150
Less: Outflow	(200)	(80)	(200)	(250)
Net Exposure (Foreign Currency Terms)	200	120	100	(100)
Spot Exchange Rate	48.01	7.45	75.57	3.20
Net Exposure (in Rupee Terms based on Spot Exchange Rate)	9602 [200 × 48.01]	894 [120 × 7.45]	7557 [100 × 75.57]	(32) [100 × 3.20/10]

Particulars	US $	French Franc (F Fr)	UK £	Japanese Yen
Forward Rate [₹/ FC]	48.82	8.12	75.98	2.40
Less: Spot Exchange Rate [₹/ FC]	48.01	7.45	75.57	3.20
Forward Premium / (Discount)	0.81	0.67	0.41	(0.80)
Net Exposure in Rupee Terms based on extent of uncertainty represented by Premium/ (Discount)	162.0 [200 × 0.81]	80.4 [120 × 0.67]	41.0 [100 × 0.41]	(8.0) [(100) × (0.8)/10]

2. Off Setting Position:

(i) Net Exposure in all the currencies is offset by better forward rates. In the case of USD. F Fr and UK Pound, the net exposure is receivable, and the forward rates are quoted at a premium for these currencies.

(ii) In case of Japanese Yen, the net exposure is payable, and the forward rate is quoted at a discount. Therefore, a better forward rate is also offsetting the net payable in Japanese Yen.

(b)

Given, e_0 = \$1.95/£

f_1 = \$1.87/£

Interest rate in home country (USA) = r_h = 7% p.a.

Interest rate in foreign country (UK) = r_f = 12% p.a.

Here, $1 + r_h = 1 + 0.07 = 1.07$

and, $\frac{f_1}{e_0} \times (1 + r_f) = 1.87/1.95(1+0.12) = 1.074$

Since, $(1 + r_h) \neq \frac{f_1}{e_0} \times (1 + r_f)$, arbitrage opportunity exists.

Now, as $(1 + r_h) < \frac{f_1}{e_0} \times (1 + r_f)$, funds will move from home country to foreign country.

The steps to be followed by the arbitrager are as follows:

I. Borrow \$1,000,000 in New York at an interest rate of 7%. This means that at the end of one year, the arbitrageur must repay principal plus interest of \$1,070,000.

II. Immediately convert the \$1,000,000 to British pounds at the spot rate of £1 = \$1.95. This yields £512,820.51 available for investment.

III. Invest the principal of £512,820.51 in London at 12% for one year. At the end of the year, the arbitrageur will have £574,358.97.

IV. Simultaneously with the other transactions, sell the £574,358.97 in principal plus interest forward at a rate of £1 = \$1.87 for delivery in one year. This transaction will yield \$1,074,051.28 next year.

V. At the end of the year, collect the £574,358.97, deliver it to the bank's foreign exchange department in return for \$1,074,051.28, and use \$1,070,000 to repay the loan. The arbitrageur will gain \$4,051.28 on this set of transactions.

8. Short Notes on:

(a) Discuss the various benefits of Digital Finance. **[5]**

(b) Discuss the various features of Global Depository Receipts (GDRs). **[5]**

(c) Discuss the Objectives of Cross Border Leasing. **[4]**

Answer:

(a) Digital finance offers a whole host of benefits:

i. Digital finance has the potential to provide affordable, convenient and secure banking services to poor individuals in developing countries. Recent improvement in the accessibility and affordability of digital financial services around the world has helped millions of poor customers move from cash-based transactions to formal digital financial transactions on secured digital platforms.

ii. Digital finance also benefits governments by providing a platform to facilitate increase in aggregate expenditure which subsequently generates higher tax revenue arising from increase in the volume of financial transactions.

iii. Digital finance also benefits the money market regulators. This is because full-scale digital finance adoption can significantly reduce the circulation of counterfeit currency and instances of money laundering etc.

iv. Through adoption of digital finance users enjoys benefits like greater control of personal finance, quick financial decision making, and the ability to make and receive payments within seconds.

v. Digital finance can also lead to greater financial inclusion, expansion of financial services to non-financial sectors, and the expansion of basic services to individuals since nearly most of the people in the developing world already own a mobile phone.

(b) Features of GDRs:

(i) **Underlying Shares**: Each GDR may represent one or more underlying share, which are physically held by the Custodian appointed by the Depository Bank.

(ii) **Entry in Company's Books:** In the Company's books, the Depository Bank's name appears as the holder of the shares.

(iii) **Returns**: Depository gets the dividends from the Company (in local currency) and distributes them to the holders of the Depository Receipts after converting into dollars at the going rate of exchange.

(iv) **Negotiable**: GDRs are exchangeable with the underlying share either at any time, or after the lapse of a particular period of time, generally 45 Days.

(v) **Globally Marketed**: GDRs are marketed globally without being confined to borders of any market or country as it can be traded in more than one country.

(vi) **Settlement**: GDRs are settled through CEDEL & Euro-Clear International Book Entry Systems.

(c) Objectives of Cross Border Leasing:

(i) **Overall Cost of Financing**: A major objective of cross-border leases is to reduce the overall cost of financing through utilization of tax depreciation allowances by the lessor in order to reduce its taxable income. The tax savings are passed through to the lessee as a lower cost of finance. The basic prerequisites are relatively high tax rates in the lessor's country, liberal depreciation rules and either very flexible or very formalistic rules governing tax ownership.

(ii) **Security**: The lessor is often able to utilize non-recourse debt to finance a substantial portion of the equipment cost. The debt is secured, among other things, by a mortgage on the equipment and by an assignment of the right to receive payments under the lease.

(iii) **Accounting Treatment**: Depending on the structure, in some countries, the lessor can utilize very favourable "Leveraged Lease" Financial Accounting treatment for the overall transaction.

(iv) **Repossession:** In some countries, it is easier for a lessor to repossess the leased equipment following a default by Lessee because the lessor is an owner and not a mere secured lender.