

PAPER - 14 : STRATEGIC FINANCIAL MANAGEMENT

SUGGESTED ANSWERS

SECTION - A

1.

- (i) (C)
- (ii) (C)
- (iii) (A)
- (iv) (D)
- (v) (A)
- (vi) (A)
- (vii) (C)
- (viii) (C)
- (ix) (D)
- (x) (A)
- (xi) (C)
- (xii) (B)
- (xiii) (B)
- (xiv) (A)
- (xv) (B)

SECTION – B

2. (a)

Calculation of Contribution

Contribution per Unit: = ₹ 220 × 50% = ₹ 110

Production and Contribution

Year	Capacity (%)	Units (Lakh)	Contribution (₹ Lakh)
1	40%	6	660
2	70%	10.5	1,155
3	90%	13.5	1,485
4	100%	15	1,650
5	100%	15	1,650
6	100%	15	1,650

Calculation of Depreciation (WDV @ 30%)

Year	Opening WDV (₹ Lakh)	Depreciation (₹ Lakh)	Closing WDV (₹ Lakh)
1	750.00	225.00	525.00
2	525.00	157.50	367.50
3	367.50	110.25	257.25
4	257.25	77.18	180.07
5	180.07	54.02	126.05
6	126.05	37.82	88.23

Assessment of Operating Cash Inflows

Year	Contribution	Fixed cost	Depreciation	PBT	Tax (40%)	PAT	CIAT	PV Factor (15%)	PV (₹ Lakh)
1	660	300	225.00	135.00	54.00	81.00	306.00	0.870	266.22
2	1155	420	157.50	577.50	231.00	346.50	504.00	0.756	381.02
3	1485	550	110.25	824.75	329.90	494.85	605.10	0.658	398.16
4	1650	550	77.18	1022.82	409.13	613.69	690.87	0.572	395.18
5	1650	550	54.02	1045.98	418.39	627.59	681.61	0.497	338.76
6	1650	550	37.82	1062.18	424.87	637.31	675.13	0.432	291.66
			661.77						2071.00

PV of operating cash inflows for 6 years = ₹ 2,071 Lakh

Calculation of Present Value of Cash Outflows

Particulars	Amount (₹ Lakh)
Cost of Fixed Assets (t = 0)	750
Initial Working Capital (t = 0)	180
Additional Working Capital at Year 3 (120 × 0.658)	78.96
Total Present Value of Cash Outflows	1,008.96

Calculation of Terminal Cash Inflows(At year 6)

Particulars	Amount(₹ Lakh)
Salvage Value (12% of 750)	90
Less: Tax on gain on sale of FA(90 – 88.23)*40%	-0.71
Recovery of Working Capital (180 + 120)	300
Total Terminal Cash Inflows	389.29

Present Value = 389.29 × 0.432 = ₹168.17 lakhs

Assessment of NPV :

Particulars	Amount(₹ Lakh)
PV of Operating Cash Inflows	2,071.00
PV of Terminal Cash Inflows	168.17
Total PV of Inflows	2,239.17
Less: Total PV of Outflows	-1,008.96
Net Present Value (NPV)	1,230.21

Since the Net Present Value (NPV) is positive, the project is financially viable.

Alternative:**Calculation of Present Value of Cash Outflows**

Particulars	Amount (₹ Lakh)
Cost of Fixed Assets (t = 0)	750
Initial Working Capital (t = 0)	180
Additional Working Capital at Year 3 (120 × 0.658)	78.96
Total Present Value of Cash Outflows	1,008.96

Calculation of Terminal Cash Inflows (At year 6)

Particulars	Amount(₹ Lakh)
Salvage Value (12% of 750)	90
Recovery of Working Capital (180 + 120)	300
Total Terminal Cash Inflows	390

Present Value = $390 \times 0.432 = ₹168.48$ lakhs

Assessment of NPV :

Particulars	Amount (₹ Lakh)
PV of Operating Cash Inflows	2,071
PV of Terminal Cash Inflows	168.48
Total PV of Inflows	2,239.48
Less: Total PV of Outflows	-1,008.96
Net Present Value (NPV)	1,230.52

Since the Net Present Value (NPV) is positive, the project is financially viable.

2. (b)**(i) Deferred Lease Rent :**

Under deferred lease rental structure, the lessor does not collect any lease rental during the deferment period to accommodate the gestation period. Let X be the annual lease rent for year 2, Year 3 and Year 4 to earn 16 % return. PV of cash inflows:

Year	Lease Rent	PVF 16 %	PV
1.	--	0.862	--
2.	X	0.743	0.743X
3.	X	0.641	0.641X
4.	X	0.552	0.552X
PV of Total Cashflow for 4 years			1.936X

PV of cash inflows = Outflows

$$1.936X = 20000000$$

$$\text{Or, } X = 20000000 / 1.936 = ₹ 10330579$$

Hence, Lease rents are as follows :

Year	Lease Rent (₹)
1.	0
2.	10330579
3.	10330579
4.	10330579

(ii) **Ballooned lease rent :**

Ballooned lease rent is a lease rent under which major part of rentals are collected in a lumpsum amount at the end of lease period.

Let X be the Year 3 and Year 4 lease rent.

Year	Lease Rent	PVF 16 %	PV
1.	2000000	0.862	1724000
2.	2000000	0.743	1486000
3.	X	0.641	0.641X
4.	X	0.552	0.552X
			3210000 + 1.193X

$$\therefore 3210000 + 1.193X = 20000000$$

$$\text{Or, } 1.193X = 16790000,$$

$$\text{Or } X = \frac{16790000}{1.193} = ₹ 14073764$$

Hence, Lease rents are as follows :

Year	Lease Rent (₹)
1.	2000000
2.	2000000
3.	14073764
4.	14073764

Advise :

If the initial cash flow is uncertain or not fixed, the most suitable lease structure would be the Deferred Lease Rent

3. (a)

(i) **Assessment of Expected Cash Inflows for each project:**

Condition	Probability(P)	X -CF	X-P×CF	Y-CF	Y-P×CF
High & Efficient	0.30	18,00,000	5,40,000	22,00,000	6,60,000
High & Inefficient	0.20	14,00,000	2,80,000	15,00,000	3,00,000
Low & Efficient	0.25	12,00,000	3,00,000	10,00,000	2,50,000
Low & Inefficient	0.25	8,00,000	2,00,000	6,00,000	1,50,000
	Total Expected Cash Inflows		₹13,20,000		₹13,60,000

(ii) Analysis of Standard Deviation for each project

Coefficient of Variation (CV) = Standard Deviation / Expected Cashflow

Standard Deviation = Coefficient of Variation (CV) * Expected Cashflow

Project X: $0.28 \times 13,20,000 = ₹3,69,600$

Project Y: $0.40 \times 13,60,000 = ₹5,44,000$

(iii) Assessment of NPV of the project

Project X :

PV = $13,20,000 \times 2.444 = ₹32,26,080$

NPV = $32,26,080 - 30,00,000 = ₹2,26,080$

Project Y :

PV = $13,60,000 \times 2.322 = ₹31,57,920$

NPV = $31,57,920 - 30,00,000 = ₹1,57,920$

(iv) Recommendation:

Project X has lower risk (CV) and higher NPV compared to Project Y. Hence, Project X should be selected.

3. (b)

(i) Sustainable Growth Rate for Year 3 and beyond, $g = \text{Return on Equity (ROE)} \times \text{Retention Ratio}$.

$g = 0.15 \times 0.40 = 0.06$ or 6 %

Expected Dividend for 3 years :

Year 1 Dividend (D_1) = $3.60 \times 1.12 = 4.03$

Year 2 Dividend (D_2) = $4.03 \times 1.12 = 4.51$

Year 3 Dividend (D_3) = $4.51 \times 1.06 = 4.78$

Terminal Value at End of Year 2 :

Terminal Value (P_2) = $D_3 / (k - g) = 4.78 / (0.12 - 0.06) = 79.67$

	Amount	PV Factor at 12%	PV
D1	4.03	0.893	3.60
D2	4.51	0.797	3.59
P2	79.67	0.797	63.50
The Present value per share			₹ 70.69

Intrinsic Value per share of ZS Ltd. = ₹ 70.69

(ii) Market Price per share as per $P/E = \text{EPS} \times P/E = 6 \times 14 = ₹ 84$

Fair value(₹ 70.69) is lower than Market price(₹ 84).So the share is overvalued.

4. (a)

Face Value = ₹ 1000

Coupon Rate = 9 % p.a. $\rightarrow$ Annual Coupon = ₹ 90

Redemption Value At Maturity (Year 6) = ₹ 1060

Investor's Required Return (for intrinsic value) = 12% p.a.

Market YTM (for price) = 10 % p.a.

(i) Assessment of Intrinsic Value of the bond if holds till maturity at Year 6 :

PV of Coupons = $90 \times \text{PVAF (6 years @ 12 \%)} = 90 \times 4.1114 = ₹ 370.03$

PV of Redemption = $1060 \times \text{PV (6 years @ 12 \%)} = 1060 \times 0.5066 = ₹ 537$

Intrinsic Value (Maturity Year 6) = $₹ 370.03 + ₹ 537 = ₹ 907.03$

(ii) Assessment of Current Market Price :

PV of Coupons = $90 \times \text{PVAF (6 years @ 10 \%)} = 90 \times 4.3552 = ₹ 391.97$

PV of Redemption = $1060 \times \text{PV (6 years @ 10 \%)} = 1060 \times 0.5645 = ₹ 598.37$

Market Price = $₹ 391.97 + ₹ 598.37 = ₹ 990.34$

(iii) Conclusion :

As the intrinsic value of the bond (₹ 907.03) is lower than the market Price (₹ 990.34), the bond is overvalued from the investor's perspective.

4. (b)

(i) Assessment of Return for each fund

Return = $(\text{NAV}_{\text{end}} - \text{NAV}_{\text{beginning}} + \text{Dividend}) / \text{NAV}_{\text{beginning}} \times 100$

Growth Fund = $(58 - 50 + 2) / 50 = 20\%$

Dynamic Fund = $(52 - 40 + 3) / 40 = 37.5\%$

(ii) Analysis of Sharpe Ratio for each fund

Sharpe = $(R_p - R_f) / \text{Standard Deviation}$

Growth Fund = $(20 - 6) / 8 = 1.75$

Dynamic Fund = $(37.5 - 6) / 14 = 2.25$

(iii) Analysis of Treynor Ratio for each fund

Treynor = $(R_p - R_f) / \text{Beta}$

Growth Fund = $(20 - 6) / 0.85 = 16.47$

Dynamic Fund = $(37.5 - 6) / 1.60 = 19.69$

(iv) Advise :

Dynamic Fund should be preferred

Measure	Better Fund
Sharpe Ratio	Dynamic Fund due to higher Sharpe Ratio which provides better total risk-adjusted return
Treynor Ratio	Dynamic Fund due to higher Treynor Ratio which provides systematic risk-adjusted return

5. (a)

(i) Analysis of Beta

$\beta = \text{Cov}(R_i, R_m) / \text{Var}(R_m)$

Beta of Stock A = $0.020 / 0.016 = 1.25$

Beta of Stock B = $0.028 / 0.016 = 1.75$

(ii) **Analysis of Risk free return**

Particulars	Value
Face Value of Treasury Bills	₹ 100
Return on Face Value (in %)	6.75%
Return on Treasury Bills (in Value) [₹100 × 6.75%]	₹6.75
Trading Price of Treasury Bills	₹108
Risk Free Return (R_F) as per Market Expectations [Actual Return ₹6.75 / Market Price ₹108]	6.25%

Assessment of Expected Rate of Return under CAPM

$$E(R) = R_F + [\beta \times (R_M - R_F)]$$

Risk Free Return, R_F = 6.25% [Treasury Bills]

Return on Market Portfolio, R_M = 15% [Return on NIFTY]

$$E(R) \text{ Stock A} = 6.25 + \{1.25 \times (15 - 6.25)\} = 17.19\%$$

$$E(R) \text{ Stock B} = 6.25 + \{1.75 \times (15 - 6.25)\} = 21.56\%$$

(iii) **Analysis of stock for decision :**

Stock	Given Return	Calculated Return	Decision
A	19%	17.19%	Undervalued
B	20%	21.56%	Overvalued

5. (b)

(i) **Analysis of return on Portfolio for 2024 – 2025 (Calculation in ₹ / Share)**

Particulars		Alpha Motors Ltd.	Beta Warehousing Ltd.
1.	Market Value by 31.03.25	43	58
2.	Cost of Investment	40	50
3.	Gain / Loss	3	8
4.	Dividend received during the year	3	2
5.	Yield [(3) + (4)]	6	10
6.	% Return [(5) ÷ (2)] x 100	15.0 %	20.0 %
7.	Weight in the Portfolio [32 : 60] [32/92,60/92]	0.35	0.65
	Weighted average return = (0.35 x 15 %) + (0.65 x 20 %)	18.26 %	

(ii) **Assessment of return on Portfolios for 2025 – 2026 (Calculation in ₹ / Share)**

Particulars		Alpha Motors Ltd.	Beta Warehousing Ltd.
1.	Expected Dividend	8	5
2.	Capital Gain by 31.03.26		
	(44 x 0.3) + (48 x 0.4) + (50 x 0.3) – 43 = (47.4 – 43)	4.40	
	(58 x 0.3) + (60 x 0.4) + (63 x 0.3) – 58 = (60.30 – 58)		2.30
3.	Yield [(1) + (2)]	12.40	7.30
4.	Market Value 01.04.25	43	58
5.	% Return [(3) ÷ (4)]	28.84 %	12.59 %
6.	Weight in Portfolio (800 x 43) : (1200 x 58)	0.33	0.67
	Weighted Average (Expected) Return	17.96 %	

(iii) Assessment of the Treynor Ratio for both Companies :

Treynor Ratio = (Return of Portfolio – Risk Free Rate) / Beta

Alpha Motor Ltd. Treynor ratio = $(28.84 - 8) / 1.5 = 13.89$

Beta Warehousing Ltd. Treynor ratio = $(12.59 - 8) / 0.50 = 9.18$

Advice :

Alpha Motor Ltd. outperforms Beta Warehousing Ltd. in terms of return per unit of systematic risk. So, Alpha Motor's stock is offering better return per unit of Systematic Risk.

Alternative

(i) Analysis of Average Return from Portfolio for FY 2024-25

Return from Alpha Motors Ltd.

Investment Cost = ₹32,000

Dividend received: $800 \times ₹ 10 \times 30\% = ₹ 2,400$

Market Value on 31.03.2025: $800 \times ₹ 43 = ₹ 34,400$

Capital Gain: $₹ 34,400 - ₹ 32,000 = ₹ 2,400$

Total Return: $₹ 2,400 + ₹ 2,400 = ₹ 4,800$

Return (%) $\frac{4,800}{32,000} \times 100 = 15\%$

Return from Beta Warehousing Ltd.

Investment Cost = ₹60,000

Dividend received: $1200 \times ₹ 5 \times 40\% = ₹ 2,400$

Market Value on 31.03.2025: $1,200 \times ₹ 58 = ₹ 69,600$

Capital Gain: $₹ 69,600 - ₹ 60,000 = ₹ 9,600$

Total Return: $₹ 2,400 + ₹ 9,600 = ₹ 12,000$

Return (%) $\frac{12,000}{60,000} \times 100 = 20\%$

Portfolio Average Return

Total Investment: $₹ 32,000 + ₹ 60,000 = ₹ 92,000$

Weights: $W_A = \frac{32,000}{92,000} = 0.3478$

$$W_B = \frac{60,000}{92,000} = 0.6522$$

Portfolio Return = $R_A \times W_A + R_B \times W_B$

$15\% \times 0.3478 + 20\% \times 0.6522 = 5.22 + 13.04$

$R_p = 18.26\%$

(ii) Assessment of Expected Average Return from Portfolio for FY 2025-26

A. Alpha Motors Ltd.

Expected Dividend = $800 \times ₹ 10 \times 80\% = ₹ 6,400$

Expected Price on 31.03.2026

Probability	Price (₹)	P × Price
0.3	44	13.2
0.4	48	19.2
0.3	50	15
Expected Price		47.4

Expected Market Value: $800 \times 47.4 = ₹ 37,920$

Beginning Value (01.04.2025): $800 \times 43 = ₹ 34,400$

Expected Capital Gain: $37,920 - 34,400 = ₹ 3,520$

Expected Total Return: $6,400 + 3,520 = ₹ 9,920$

Expected Return: $\frac{9,920}{34,400} \times 100 = 28.84\%$

B. Beta Warehousing Ltd.

Expected Dividend = $1,200 \times ₹ 5 \times 100\% = ₹ 6,000$

Expected Price on 31.03.2026

Probability	Price (₹)	P × Price
0.3	58	17.4
0.4	60	24
0.3	63	18.9
Expected Price		60.3

Expected Market Value: $1,200 \times 60.3 = ₹ 72,360$

Beginning Value (01.04.2025): $1,200 \times 58 = ₹ 69,600$

Expected Capital Gain: $72,360 - 69,600 = ₹ 2,760$

Expected Total Return: $6,000 + 2,760 = ₹ 8,760$

Expected Return: $\frac{8,760}{69,600} \times 100 = 12.59\%$

Portfolio Expected Return FY 2025-26

Using market values as on 01.04.2025:

Total Portfolio Value: $34,400 + 69,600 = ₹ 104,000$

Weights:

$$W_A = \frac{34,400}{104,000} = 0.3308$$

$$W_B = \frac{69,600}{104,000} = 0.6692$$

Expected Portfolio Return: $R_p = (0.3308 \times 28.84) + (0.6692 \times 12.59) = 9.54 + 8.42 = R_p = 17.96\%$

(iii) Assessment of the Treynor Ratio for both Companies :

Treynor Ratio = (Return of Portfolio – Risk Free Rate) / Beta

Where, $R_f = 8\%$

Alpha Motors Ltd. : $(28.84 - 8) / 1.5 = 20.84 / 1.5 = 13.89$

Beta Warehousing Ltd. : $(12.59 - 8) / 0.5 = 4.59 / 0.5 = 9.18$

Advice :

Alpha Motor Ltd. outperforms Beta Warehousing Ltd. in terms of return per unit of systematic risk.

So, Alpha Motor's stock is offering better return per unit of Systematic Risk.

6. (a)

The given portfolio beta already incorporates the correlation effect ($\beta = \rho \times \sigma_P / \sigma_M$) Therefore, correlation should not be applied separately while computing the hedge ratio.

(i) Number of Nifty Futures Contracts Needed to Hedge the Portfolio: Effective Beta :

Effective Beta = 1.50

Number of Contracts = (Portfolio Value $\times$ Effective Beta) / (Futures Price $\times$ Contract Size)=

Number of Contracts = ($\text{₹}250 \text{ crore} \times 1.50$) / ($19,250 \times 200$) = 974 contracts

(ii) Gain/loss on future contract

New Nifty Index Value:

New Nifty Value = $19,300 \times (1 - 0.04) = 19,300 \times 0.96 = 18,528$

Price Change in Futures contracts :

Price Change = $19,250 - 18,528 = 722$

Gain per Contract :

Gain per Contract = $722 \times 200 = \text{₹} 1,44,400$

Total Gain on Futures Contracts :

Total Gain = $974 \text{ contracts} \times \text{₹} 1,44,400 = \text{₹} 14,06,45,600$

Portfolio gain/loss :

Portfolio Loss Percentage = Effective Beta $\times$ Market Decline

= $1.50 \times 4\% = 6.0\%$

Portfolio Loss = $6.0\% \times \text{₹} 250 \text{ crore} = \text{₹} 15,00,00,000$

Net Profit / loss by hedging :

= Total Gain on Futures Contracts – Portfolio Loss

= $\text{₹} 14,06,45,600 - \text{₹} 15,00,00,000$

= $-\text{₹} 93,54,400$

Net loss by hedging = $\text{₹} 93,54,400$

(iii) Nifty Increases to 19,350 Points

Price Change in Futures :

Price Change = $19,350 - 19,250 = 100$

Loss per Contract :

Loss per Contract = $100 \text{ points} \times 200 = \text{₹} 20,000$

Total Loss on Futures Contracts :

= $974 \text{ contracts} \times \text{₹} 20,000 = \text{₹} 1,94,80,000$

Portfolio Gain :

Percentage Change in Nifty = $(19,350 - 19,300) / 19,300 = 0.259\%$

Portfolio Gain Percentage = Effective Beta $\times$ Percentage Change

= $1.50 \times 0.259\% = 0.3886\%$

Portfolio Gain = $0.3886\% \times \text{₹} 250 \text{ crore} = \text{₹} 97,15,000$

Net Profit/loss by hedging :

= Portfolio gain – Total loss on Futures Contracts

= $\text{₹} 97,15,000 - \text{₹} 1,94,80,000 = -\text{₹} 97,65,000$

Net loss by hedging = $\text{₹} 97,65,000$

Alternative:

(i) Number of Nifty Futures Contracts Needed to Hedge the Portfolio: Effective Beta :

Effective Beta = Portfolio Beta $\times$ Correlation = $1.50 \times 0.50 = 0.75$

Number of Contracts = (Portfolio Value $\times$ Effective Beta) / (Futures Price $\times$ Contract Size)

Number of Contracts = ($\text{₹}250 \text{ crore} \times 0.75$) / ($19,250 \times 200$) = 487 contracts

(ii) Gain/loss on future contract

New Nifty Index Value:

New Nifty Value = $19,300 \times (1 - 0.04) = 19,300 \times 0.96 = 18,528$

Price Change in Futures contracts :

Price Change = $19,250 - 18,528 = 722$

Gain per Contract :

Gain per Contract = $722 \times 200 = \text{₹} 1,44,400$

Total Gain on Futures Contracts :

Total Gain = $487 \text{ contracts} \times \text{₹} 1,44,400 = \text{₹} 7,03,22,800$

Portfolio gain/loss :

Portfolio Loss Percentage = Effective Beta $\times$ Market Decline

= $0.75 \times 4\% = 3.0\%$

Portfolio Loss = $3.0\% \times \text{₹} 250 \text{ crore} = \text{₹} 7,50,00,000$

Net Profit / loss by hedging :

= Total Gain on Futures Contracts – Portfolio Loss

= $\text{₹} 7,03,22,800 - \text{₹} 7,50,00,000$

= $-\text{₹} 46,77,200$

Net loss by hedging = $\text{₹} 46,77,200$

(iii) Nifty Increases to 19,350 Points

Price Change in Futures :

Price Change = $19,350 - 19,250 = 100$

Loss per Contract :

Loss per Contract = $100 \text{ points} \times 200 = \text{₹} 20,000$

Total Loss on Futures Contracts :

= $487 \text{ contracts} \times \text{₹} 20,000 = \text{₹} 97,40,000$

Portfolio Gain :

Percentage Change in Nifty = $(19,350 - 19,300) / 19,300 = 0.259\%$

Portfolio Gain Percentage = Effective Beta $\times$ Percentage Change

= $1.50 \times 0.259\% = 0.3886\%$

Portfolio Gain = $0.3886\% \times \text{₹} 250 \text{ crore} = \text{₹} 97,15,000$

Net Profit/loss by hedging :

= Portfolio gain – Total loss on Futures Contracts

= $\text{₹} 97,15,000 - \text{₹} 97,40,000 = -\text{₹} 25,000$

Net loss by hedging = $\text{₹} 25,000$

6. (b)

(i)

Company	Fixed (%)	Floating
XEB Ltd.	7.5	LIBOR + 25 bps.
YON Ltd.	8.45	LIBOR + 37 bps.
Differential	0.95	0.12
Net difference	$0.95 - 0.12 = 0.83$	
Bank's Commission	0.20	
Balance Gain $(0.83 - 0.20) = 0.63$	$60\% \times 0.63 = 0.378$	$40\% \times 0.63 = 0.252$

(ii) & (iii)

	XEB Ltd.	YON Ltd.
Borrow	At fixed rate 7.5 %	At floating rate LIBOR + 0.37 %
Pay Bank	(7.5 %)	(LIBOR + 0.37 %)
Collect differential from YON 7.5 % - (LIBOR + 0.25 %)	+ 7.25 % - LIBOR	(7.25 % - LIBOR)
Pay Bank's Commission		(0.2)
Receive gain from YON	+ 0.378	(0.378)
Net interest = Effective rate of interest	$- 0.25 - \text{LIBOR} + 0.378 =$ (LIBOR - 0.128)	$(7.25 + 0.37 + 0.2 + 0.378) = 8.198$
Original Interest	LIBOR + 0.25 %	8.45 %
Gain p.a. due to the swap	0.378 %	0.252 %
Gain in dollars p.a.	$0.378\% \times 50 \text{ m} = \$$ 189000	$0.252\% \times 50 \text{ m} = \$ 126000$

7. (a)

(i) **Assessment of Cross Rate for EUR / INR :**

$\text{EUR / INR} = \text{EUR / USD} \times \text{USD / INR}$

Bid Rate = $1.1400 \times 85.20 = 97.128 = 97.13$

Ask Rate = $1.1450 \times 85.50 = 97.8975 = 97.90$

Cross Rate = ₹ 97.13 / 97.90

(ii) **Analysis of Arbitrage Profit / Loss :**

Cross Route (EUR → USD → INR)

EUR → USD (Sell EUR at Bid) = $1000000 \times 1.1400 = \text{USD } 1140000$

USD → INR (Sell USD at Bid) = $1140000 \times 85.20 = ₹ 97128000$

INR via Cross Route = ₹ 97128000

Direct Route (EUR → INR)

Sell EUR at Bid = $1000000 \times 95.20 = ₹ 95200000$

INR via Direct Route = ₹ 95200000

Arbitrage Profit : $97128000 - 95200000 = ₹ 1928000$

(iii) Analysis of Appreciation / Depreciation of INR:

Since the rates are in Bid-Ask form we need to calculate the mid-rate to determine the Appreciation / Depreciation of INR.

Against USD(Mid rate):

$$\text{Spot mid rate} = (85.20 + 85.50) / 2 = 85.35$$

$$\text{Forward mid rate} = (86.10 + 86.60) / 2 = 86.35$$

$$\% \text{ Change} [(86.35 - 85.35) / 85.35] \times 100 = 1.17 \%$$

INR depreciated by 1.17 %

Against EUR(Mid rate):

$$\text{Spot mid rate} = (95.20 + 95.90) / 2 = 95.55$$

$$\text{Forward mid rate} = (96 + 96.60) / 2 = 96.30$$

$$\% \text{ Change} [(96.30 - 95.55) / 95.55] \times 100 = 0.78 \%$$

INR depreciated by 0.78 %

Alternative:

Against USD (Ask Rate):

$$\% \text{ Change} (86.60 - 85.50) / 85.50 = 1.29 \%$$

INR depreciated by 1.29 %

Against EUR (Ask Rate):

$$\% \text{ Change} (96.60 - 95.90) / 95.90 = 0.73 \%$$

INR depreciated by 0.73 %

Alternative:

Against USD (Bid Rate):

$$\% \text{ Change} (86.10 - 85.20) / 85.20 = 1.06 \%$$

INR depreciated by 1.06 %

Against EUR (Bid Rate):

$$\% \text{ Change} (96.00 - 95.20) / 95.20 = 0.84 \%$$

INR depreciated by 0.84 %

7. (b)

(i)	Analysis of Payable of ₹ 600 Million after 3 Months.
	Covering through forward market :
	Rupee outflow = ₹ 600 Million x 0.60 = ₹ 360.00 Million
	Covering through Money market :
	Borrow rupee, convert into yen spot and invest for 3 months.
	Yen to be invested = $600 / [1 + (0.5\% \times 3/12)]$ or $(1.00125) =$ ₹ 599.25 million
	Rupee amount to be borrowed = ₹ 599.25 million x 0.5850 = ₹ 350.56 million
	Rupee amount repayable = ₹ 350.56 x $[1 + (9\% \times 3/12)]$ or $(1.0225) =$ ₹ 358.45 million
	Recommendation : Outflow through money market is lower than the forward market cover. So money market cover is preferable.

(ii)	Analysis of Receivable of \$ 12 million after 3 months :	
	(a)	Covering through forward market :
		Rupee inflow = \$ 12 million x ₹ 90.20 per \$ = ₹ 1082.40 Million
	(b)	Covering through Money market :
		Borrow \$, convert into rupee spot and invest for 3 months.
		\$ amount to be borrowed = $12 / [1 + (6.5\% \times 3/12)]$ or 1.01625 = \$ 11.81 Million
		Rupee inflow at Spot = \$ 11.81 million x ₹ 89.20 per \$ = ₹ 1053.45 million
		Rupee inflow after 3 months = ₹ 1053.45 x $[1 + (8\% \times 3/12)]$ or 1.02 = ₹ 1074.52 million
	(C)	Recommendation : Inflow through forward market cover is higher than the money market cover. So, Forward market cover is preferable.

8. (a)

Constituents of Digital Finance Business Functions :

(I) Digital Financing: Digital financing include

- (1) Invoice financing and invoice factoring i.e., borrowing against or selling its accounts receivables to any third party.
- (2) Electronic Invoicing i.e., generating and automated processing of invoices.
- (3) Lease Financing i.e., use of assets that is owned by the finance provider.
- (4) Crowdfunding i.e., raising money through small contributions from a large number of people.

(II) Digital Investments :

This includes investment advisory services including arrangement of transactions. For example, online brokerage, mobile and social trading in B2C area, high frequency and algorithmic B2B trading.

(III) Digital Money :

It includes all digital innovations in how money and currency are created, stored, valued, regulated or exchanged.

(IV) Digital Payments :

This refers to electronic payments through wallets or UPIs.

(V) Digital Insurance :

In B2B space, digital insurance platforms provide a number of value-added services including data analytics. In B2C space, it provides innovative services to customers.

(VI) Digital Finance Advice :

This includes aggregators who provide comparative quotes of financial services

8. (b)

Concept of ADR:

An American Depositary Receipt (ADR) is a certificate that represent shares of a foreign stock owned and issued by a U.S. bank. The foreign shares are usually held in custody overseas, but the certificates trade in the U.S. Through this system, a large number of foreign-based companies are actively traded on one of the three major U.S. equity markets (the NYSE, AMEX or Nasdaq).

ADRs provide the following advantages :

- (i) Access to Large Capital.
- (ii) Access to Foreign Exchange.
- (iii) No Change in the Shareholding / voting pattern.
- (iv) Increased recognition for the Company internationally by bankers, customers, etc.
- (v) No Exchange Rate risk since the Company pays interest and dividends in Indian Rupees.

8. (c)

A typical Securitization involves the following parties:

- (i) **Originator:**
An originator actually creates a securitized asset. This entity generates (originates) or owns the defined or identifiable cash flow (that is, an income stream from receivables).
- (ii) **Arranger:**
An originator usually appoints a financial institution to design and set up the securitization structure. It is known as arranger.
- (iii) **Special Purpose Vehicle:**
This is an entity established by the Originator to specifically purchase the assets and realize their off-balance-sheet treatment for legal and accounting purposes.
- (iv) **Investors:**
In a securitization process, typically, financial institutions, insurance companies, pension funds, hedge funds, companies, high net worth individuals are the investors
- (v) **Servicers:**
SPV appoints the servicer to administer and collect the underlying receivables in the capacity of SPV's agent for a servicing fee stipulated under the servicing agreement.
- (vi) **Rating Agencies:**
Rating agencies rate the securities to indicate whether the SPV has a strong or weak capacity to pay interest and principal.
- (vii) **Enhancement Providers:**
They provides credit enhancements to the asset-backed securities.
- (viii) **Regulators:**
They issues various regulations that guides and regulates the securitization process.