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Answer Paper	
ADVANCED FINANCIAL MANAGEMENT	Duration: 70
Details: Test 4 (Ch-10, 11 and 12)	Marks: 40

Instructions:

- All the questions are compulsory
- Properly mention test number and page number on your answer sheet, Try to upload sheets in arranged manner.
- In case of multiple choice questions, mention option number only Working notes are compulsory wherever required in support of your solution
- Do not copy any solution from any material. Attempt as much as you know to fairly judge your performance.

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Ans.1

(i) Pay the supplier in 60 days

If the payment is made to supplier in 60 days, the applicable forward rate for 1 USD	Rs. 83.40
Payment Due	USD 2,000,000
Outflow in Rupees (USD 2000000 × Rs. 83.40)	Rs. 16,68,00,000
Add: Interest on loan for 30 days@10% p.a.	Rs. 13,90,000
Total Outflow in Rs.	Rs.16,81,90,000

(ii) Availing supplier's offer of 90 days credit

Amount Payable	USD 2,000,000
Add: Interest on credit period for 30 days @ 8% p.a.	USD 13,333
Total Outflow in USD	USD 2,013,333
Applicable forward rate for 1 USD	Rs. 83.90
Total Outflow in Rs. (USD 2,013,333 × Rs. 83.90)	Rs. 16,89,18,639

Advise: Alternative 1 is better as it entails lower cash outflow

(6 Marks)

Ans.2

Net Issue Size = \$15 million

$$\text{Gross Issue} = \frac{\$15 \text{ Million}}{0.97} = \$ 15.464 \text{ million}$$

Issue Price per GDR in Rs. (350 x 3 x 94%) Rs. 987

Issue Price per GDR in \$ (Rs. 987/ Rs. 84) \$ 11.75

Dividend Per GDR (D1) (Rs. 10 x 3)

Rs. 30

Net Proceeds Per GDR (Rs. 987 x 0.97)

Rs. 957.39

(i) Number of GDR to be issued $\frac{\$15.464 \text{ million}}{\$11.75} = 1.316085 \text{ million}$

(ii) Cost of GDR to XY Ltd. $K_e \frac{30.00}{957.39} + 0.08 = 11.13\%$

(6 Marks)

Ans.3

Final settlement amount shall be computed by using formula:

$$= \frac{(N)(RR-FR)(dtm/DY)}{[1+RR(dtm/DY)]}$$

Where,

N = the notional principal amount of the agreement;

RR = Actual Reference Rate for the maturity specified by the contract prevailing on the contract settlement date;

FR = Agreed-upon Forward Rate; and

dtm = maturity period in days or months of the forward rate agreement

DY = Total number of days or month in a year as per convention

Accordingly,

i. If Banker pays to XY Ltd. an amount of Rs. 9,78,952.52 then actual interest shall be computed as follows:

$$\text{Rs. } 9,78,952.52 = \frac{(\text{Rs.100 crore})(RR - 0.082)(3/12)}{[1 + RR(3/12)]}$$

RR = 0.086

Thus, the actual interest rate happens to be 8.60% on the settlement date.

ii. If XY Ltd. pays to Banker an amount of Rs. 9,80,872.98 then actual interest shall be computed as follows:

$$\text{— Rs. 9,80,872.98} = \frac{(\text{Rs.100crore})(\text{RR} - 0.082)(3/12)}{[1 + \text{RR}(3/12)]}$$

$$\text{RR} = 0.078$$

Thus, the actual interest rate happens to be 7.80% on the settlement date.

(5 Marks)

Ans.4

In each of the case first the FEADI Rule of Automatic Cancellation shall be applied and customer shall pay the charges consisted of following:

- a) Exchange Difference
- b) Swap Loss
- c) Interest on Outlay Funds

a) Exchange Difference

(i) Cancellation Rate

The forward sale contract shall be cancelled at Spot TT Purchase for \$ prevailing on the date of cancellation as follows:

\$ / Rs. Market Buying Rate	Rs. 65.9600
Less: Exchange Margin @ 0.10%	Rs. 0.0660
	Rs. 65.8940 Rounded off to Rs. 65.8950

(ii) Amount payable on \$ 50,000

Bank sells \$ 50,000 @ Rs. 66.8400	Rs. 33,42,000
Bank buys \$ 50,000 @ Rs. 65.8950	Rs. 32,94,750
Amount payable by customer	Rs. 47,250

b) Swap Loss

On 10th September the bank does a swap sale of \$ at market buying rate of Rs. 66.1500 and forward purchase for September at market selling rate of Rs. 66.3200.

Bank buys at	Rs. 66.3200
Bank sells at	Rs. 66.1500
Amount payable by customer	Rs. 0.1700

Swap Loss for \$ 50,000 in Rs. = Rs. 8,500

c) Interest on Outlay of Funds

On 10th September, the bank receives delivery under cover contract at Rs. 66.6800 and sell spot at Rs. 66.1500.

Bank buys at	Rs. 66.6800
Bank sells at	Rs. 66.1500
Amount payable by customer	Rs. 0.5300

Outlay for \$ 50,000 in Rs. 26,500

Interest on Rs. 26,500 @ 12% for 10 days Rs. 87

d) Total Cost

Cancellation Charges	Rs. 47,250.00
Swap Loss	Rs. 8,500.00

Interest	Rs. 87.00
	Rs. 55,837.00

e) New Contract Rate

The contract will be extended at current rate

\$ / Rs. Market forward selling Rate for November	Rs. 66.4900
Add: Exchange Margin @ 0.10%	Rs. 0.0665
	Rs. 66.5565 Rounded off to Rs. 66.5575

(i) Charges for Cancellation of Contract = Rs. 55,838.00 or Rs. 55,837.00

(ii) Charges for Execution of Contract

Charges for Cancellation of Contract	Rs. 55,837.00
Spot Selling US \$ 50,000 on 20th September at Rs. 65.9900 + 0.0660 (Exchange Margin) = Rs. 66.0560 rounded to Rs. 66.0550	Rs. 33,02,750.00
	Rs. 33,58,587.00

(iii) Charges for Extension of Contract

Charges for Cancellation of Contract	55837
New Forward Rate	Rs. 66.5575

(8 Marks)

Ans.5

Day	Principal (Rs.)	MIBOR (%)	Interest (Rs.)
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Tuesday	10,00,00,000	8.75	23,973
Wednesday	10,00,23,973	9.15	25,075
Thursday	10,00,49,048	9.12	24,999
Friday	10,00,74,047	8.95	24,539
Saturday & Sunday (*)	10,00,98,586	8.98	49,254
Monday	10,01,47,840	9.15	25,106
Total Interest @ Floating			1,72,946
Less: Net Received			4,170
Expected Interest @ fixed			1,68,776
Thus, Fixed Rate of Interest			0880046
Approx.			8.80%**

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

(**) Rs. 10 crore \times 'X'/100 \times 7/365 = Rs. 1,68,776

Hence, $X = \frac{1,68,776 \times 365 \times 100}{1 \text{ cr.} \times 7} = 8.80\%$

(5 Marks)

Ans.6

Let F be the recommended INR/USD rate for the forward cover. Accordingly, year-wise equivalent cash inflows in Indian Rupees shall be as follows:

Year	Cash Inflow in USD Lakh	Cash Inflow in Rs. Lakh
1	30.00	30.00F

2	40.00	40.00F
3	50.00	50.00F
4	60.00	60.00F
5	70.00	70.00F

Now let us compute Net Present Value of project assuming a discount rate of 12% as follows:

Year	PVF@12%	Cash flow in Rs. Lakh	PV in Rs. Lakh
0	1.00	- 12450.00	- 12450.00
1	0.893	30.00F	26.79F
2	0.797	40.00F	31.88F
3	0.712	50.00F	35.60F
4	0.636	60.00F	38.16F
5	0.567	70.00F	39.69F
			172.12F - 12450

Since expected surplus after closure of the project is Rs. 1858.08 Lakh, we can compute the value of F as follows:

$$1858.08 = 172.12F - 12450$$

$$F = 83.13$$

Thus, for forward cover the rate of Rs. 83.13/ USD is recommended.

Alternatively, if students have assumed discounting rate as 15% then answer will be as follows:

Let F be the recommended INR/USD rate for the forward cover. Accordingly, year-wise equivalent cash inflows in Indian Rupees shall be as follows:

Year	Cash Inflow in USD Lakh	Cash Inflow in Rs. Lakh
1	30.00	30.00F
2	40.00	40.00F
3	50.00	50.00F
4	60.00	60.00F
5	70.00	70.00F

Now let us compute Net Present Value of project assuming a discount rate of 15% as follows:

Year	PVF@15%	Cash flow in Rs. Lakh	PV in Rs. Lakh
0	1.00	- 12450.00	- 12450.00
1	0.870	30.00F	26.10F
2	0.756	40.00F	30.24F
3	0.658	50.00F	32.90F
4	0.572	60.00F	34.32F
5	0.497	70.00F	34.79F
			158.35F - 12450

Since expected surplus after closure of the project is Rs. 1858.08 Lakh, we can compute the value of F as follows:

$$1858.08 = 158.35F - 12450$$

F = 90.36

Thus, for forward cover the rate of Rs. 90.36/ USD is recommended.

Alternative Solution if students have assumed that the discounting rate 15% for the given cash inflows then applicable discounting rates for the project is -

$$(1 + 0.06978) / (1 + \text{Risk Premium}) = (1 + 0.15)$$

$$\text{Or, } 1 + \text{Risk Premium} = 1.15 / 1.06978 = 1.0750$$

$$\text{Therefore, Risk adjusted dollar rate is } = (1.0750 \times 1.04186) - 1 = 1.1199 - 1 = 0.12$$

Calculation of NPV

Year	Cash flow US\$ lakh	PV Factor at 12%	PV (US\$ lakh)
1	30.00	0.893	26.79
2	40.00	0.797	31.88
3	50.00	0.712	35.60
4	60.00	0.636	38.16
5	70.00	0.567	39.69
			172.12
Less: Investment			150.00
NPV			22.12

Since PQR Ltd. is expecting a net surplus of Rs. 1858.08 lakh after the closure of the project the recommended rate of INR/ USD is (Rs. 1858.08 lakh/ USD 22.12 lakh) Rs. 84.00.

(5 Marks)

MCQs:-

1. C) Rs. 65,50,000

Explanation: The transaction is governed by a forward contract, so the agreed rate (Rs. 65.5000) is used, not the spot rate on 31st July 2015.

Amount to be debited = USD 1,00,000 × Rs. 65.5000 = Rs. 65,50,000

2. A) INR 109.44 Million, Project is viable (NPV positive)

Explanation: Risk Adjusted Dollar Rate:

The required return on the project is 14%.

The risk-free rate for USD is 8% and for INR is 12%.

Using the formula: $(1 + 0.12) \times (1 + \text{Risk Premium}) = (1 + 0.14)$

Risk Premium = $1.0179 - 1 = 0.099$

Therefore, the risk-adjusted dollar rate is 9.9%.

NPV Calculation:

Cash flows for 5 years are given in USD.

The PV factor at 9.9% is calculated for each year.

The NPV of the project in USD is calculated by discounting the cash flows for each year, resulting in a sum of USD 18.02 Million.

Investment: The initial investment is USD 16.50 Million.

NPV (USD) = $18.02 - 16.50 = 1.52$ Million USD

Rupee NPV = $1.52 \times 72 = 109.44$ Million INR

Conclusion: Since the NPV is positive (INR 109.44 Million), the project is viable and should be accepted.

3. C) Basis rate swap - where both parties pay floating rates but each rate is tied to different benchmarks with different maturity periods

Explanation: A basis rate swap (also called non-generic swap) differs from a plain vanilla swap in that both legs are floating rates, but they are measured against different benchmarks (e.g., 1-month LIBOR vs 3-month LIBOR). This structure allows parties to hedge basis risk between different rate indices.

4. C) Facilitating short-term liquidity needs of the government.

Explanation: Facilitating short-term liquidity needs of the government. Sovereign Wealth Funds (SWFs) are state-owned investment funds created by governments to achieve specific economic and financial objectives. Commonly associated objectives of SWFs include diversifying from non-renewable commodity exports, earning higher returns than foreign exchange reserves, ensuring sustainable long-term capital growth for future generations, and stabilizing the budget and economy from excess volatility. The primary purpose of SWFs is typically not to facilitate short-term liquidity needs of the government. Instead, they are often created to address longer-term financial and economic considerations.

5. C) 5.44% p.a.

Explanation: The formula to calculate the 3-month FRA rate at 3 months forward is as follows:

$$(1 + 6\text{-month rate}) = (1 + 3\text{-month rate}) \times (1 + 3\text{-month FRA rate})$$

Substituting the given rates into the equation:

6-month rate = 5% p.a. (for USD)

3-month rate = 4.50% p.a. (for USD)

Now, applying the formula:

$$(1 + 0.05 \times \frac{6}{12}) = (1 + 0.045 \times \frac{3}{12}) \times (1 + i_{3,6} \times \frac{3}{12})$$

Simplifying: $(1 + 0.025) = (1 + 0.01125) \times (1 + i_{3,6} \times \frac{3}{12})$

$$1.025 = 1.01125 \times (1 + i_{3,6} \times \frac{3}{12})$$

Solving for $i_{3,6}$

$$i_{3,6} = \left[\frac{1.025}{1.01125} - 1 \right] \times \frac{12}{3} = 0.0444 \times 4 = 5.44\%$$

Thus, the 3-month FRA rate at 3 months forward is 5.44% p.a.

(5 x 1 = 5 Marks)

