One Month Premium 10/15

Note: (1) Consider 365 days in a year.

(2) Prevailing Prime Lending Rate is 12%

Based on above case scenario, choose the most appropriate answer of the following:

I. The bank may accept the request of customer of delivery before due date of forward contract provided the customer is ready to bear the loss if any consisting of…………

(a) Swap Difference

(b) Interest on Outlay of Fund

(c) Swap Difference Plus Interest on Outlay of Fund

(d) Fixed Charges Plus Swap Difference and Interest on Outlay of Fund

II. In case of early delivery bank shall charge interest on outlay of fund at a rate not less than................

(a) 8%

(b) 10%

(c) 12%

(d) 18%

III. Swap Difference for US$ 1,00,000 is....................

(a) ₹ 5,000

(b) ₹ 20,000

(c) ₹ 18,000

(d) ₹ 8,000

IV. Interest on outlay of funds shall be approximately......................

(a) ₹ 92 payable by X

(b) ₹ 183 payable by X

(c) ₹ 183 payable by Bank

(d) ₹ 122 payable by Bank

V. Net inflow to Mr. X is approximately................

(a) ₹ 85,42,183

(b) ₹ 85,20,000

(c) ₹ 85,19,817

(d) ₹ 85,40,000

(MTP April – 2024)

Case Scenario 2

A US parent company has subsidiaries in France, Germany, UK and Italy. The amounts due to and from the affiliates is converted into a common currency viz. US dollar and entered in the following matrix.

Inter Subsidiary Payments Matrix **(US $ Thousands)**

		Paying Affiliate				
		France	Germany	UK	Italy	Total
Receiving Affiliate	France	---	80	120	200	400
	Germany	120	---	80	160	360
	UK	160	120	---	140	420
	Italy	200	60	120	---	380
	Total	480	260	320	500	**1560**

The treasurer of US Parent company is suggesting that by applying Multilateral Netting system the company can save a lot of transfer/ exchange costs. The company's Board agreed with Treasurer's proposal.

From the above case scenario, choose the most appropriate answer of following MCQs.

I. Before applying Multilateral Netting it is necessary to apply..................

(a) Unilateral Netting

(b) Bilateral Netting

(c) Multilateral Netting

(d) Interest Rate Swapping

II. Through Multinational Netting these transfers will be reduced to ………………………

(a) $ 50,000

(b) $ 100,000

(c) $ 150,000

(d) $ 200,000

III. The Net Payment/ Net Receipts for France after netting off shall be……………

(a) Net Receipt $ 40,000

(b) Net Payment $ 80,000

(c) Net Payment $ 40,000

(d) Net Receipt $ 80,000

IV. The Net Payment/ Net Receipts for Italy after netting off shall be……………

(a) Net Receipt $ 60,000

(b) Net Payment $ 120,000

(c) Net Payment $ 60,000

(d) Net Receipt $ 120,000

V. Suppose if the transfer charges are 0.01% of the amount transferred then by applying multilateral netting techniques there will be reduction in overall cost of transfer by ………….

(a) US $ 136

(b) US $ 156

(c) US $ 1,360

(d) US $ 1,560

(MTP April – 2024)

QUESTIONS FROM NOV-2024 ATTEMPT

FOREX

Question – 03 (B)

On 20/10/2024, the balance in NOSTRO account with XYZ Bank in London was GBP 80,000 and the balance in overbought was GBP 50,000. During the day the following transactions have taken place.

Events	Amount (GBP)
DD Purchased	25,000
Purchased a bill on London	75,000
Sold forward TT	50,000
Forward purchased contract cancelled	25,000
Remitted by TT	42,500
Draft in London cancelled	20,000

What steps would you take, if you are required to maintain a credit balance of GBP 10,000 in the NOSTRO account and keep as overbought position on GBP 32,500?

(8 Marks)

(Exam Nov – 2024)

Question – 06 (B)

True Life Inc., a US based company, has won a contract to implement a project in India. The project will require an initial investment of ₹ 80,000 million. The whole project along with the equipment will be sold to the Indian Government for ₹ 9,600 million in one-year time. Since the Indian Government will pay for the amount in Indian Rupee (₹), the company is worried about exposure due to exchange rate volatility.

(i) Construct a swap that will help the True Life Inc. to reduce the exchange rate risk.

(ii) Assume that the Indian Government offers a swap at spot rate which is INR/USD 80 in one year. The spot rate after one year is expected to be INR/USD 84. Further, you may also assume that the True Life Inc. can also take a USD loan at 6% per annum. ADVISE whether the company should opt for his option or just do nothing.

(6 Marks)

(Exam Nov – 2024)

CHAPTER – 06

RISK MANAGEMENT

Question – 01

You hold worth 2 crore shares of X Ltd. whose market price standard deviation is 2% per day. Assuming 252 trading days a year, determine maximum loss level over the period of 1 trading day and 10 trading days with 99% confidence level.

Solution:

X Ltd. Shares = ₹ 200 lacs

S.D. = 2% per day

1 year = 252 days

At 99% confidence level.

(i) 1 day VAR

(ii) 10 days VAR

1 Day VAR

VAR $= x\ \sigma\ z$

$= 200 \times 2\% \times 2.33$

$= 4 \times 2.33$

= ₹ 9.32 lacs

10 Days VAR

10 Days S.D. $= 4\sqrt{10}$ = ₹ 12.65

$= 12.65 \times 2.33$

= ₹ 29.47 lacs

Question – 02

Consider a portfolio consisting of a ₹ 20,000,000 investment in share XYZ and a ₹ 20,000,000 investment in share ABC. The daily standard deviation of both shares is 1% and that the coefficient of correlation between them is 0.3. You are required to determine the 10-day 99% value at risk for the portfolio?

Solution:

XYZ = 200 lacs 0.5 1%

ABC = 200 lacs 0.5 1%

400 lacs

$$\sigma_p = \sqrt{\sigma_A{}^2 W_A{}^2 + \sigma_B{}^2 W_B{}^2 + 2 \times W_A \times W_B \times \sigma_A \times \sigma_B \times r_{AB}}$$

$$= \sqrt{1^2 0.50^2 + 1^2 \times 0.50^2 + 2 \times 0.5 \times 0.5 \times 1 \times 1 \times 0.30}$$

$$= 0.8062\%$$

1 Day VAR

1 Day S.D. = ₹ 400 × 0.8062%

= ₹ 3.22 Lacs.

10 Days VAR

10 Days S.D. = ₹ 3.22 $\sqrt{10}$

= ₹ 10.18 Lacs.

10 Days VAR = 10.18 × 2.33

= ₹ 23.72 Lacs.

Question – 03

On Tuesday morning (before opening of the capital market) an investor, while going through his bank statement, has observed that an amount of ₹ 7 lakhs is lying in his bank account. This amount is available for use from Tuesday till Friday. The Bank requires a minimum balance of ₹ 1000 all the time. The investor desires to make a maximum possible investment where Value at Risk (VaR) should not exceed the balance lying in his bank account. The standard deviation of market price of the security is 1.5 per cent per day. The required confidence level is 99 per cent.

Given

Standard Normal probabilities										
Z	0.00	.01	.02	.03	0.04	.05	.06	.07	.08	.09
2.2	.9861	.9864	.9868	.09871	.9875	.9878	.9881	.9884	.9987	.9890
2.3	.9893	.9896	.9998	.9901	.9904	.9906	.9909	.9911	.9913	.9916
2.4	9918	.9920	.9922	.9923	.9925	.9929	.9931	.9932	.9934	.9936

You are required to determine the maximum possible investment.

Solution:

Maximum possible investment

Amount available	= ₹ 7,00,000
(-) Minimum Balance	= ₹ 1,000
Possible loss for 4 days	= ₹ 6,99,000

4 Days VAR = ₹ 6,99,000

4 Days VAR = 4 days S.D. × 2.33

₹ 6,99,000 = 4 days S.D. × 2.33

$$\text{4 days S.D. (₹)} = \frac{₹\ 6{,}99{,}000}{2.33}$$

= ₹ 3,00,000

$$\text{1 Day S.D. (₹)} = ₹\ 3{,}00{,}000\sqrt{\frac{1}{4}}$$

= ₹ 1,50,000

1 day S.D. (%) = 1.5%

$$\text{Maximum possible Investment} = \frac{₹\ 1{,}50{,}000}{1.5\%} = ₹\ 1{,}00{,}00{,}000$$

Question – 04

Mr. Bull is a rational risk taker. He takes his position in a single stock for 4 days in a week. He does not take a position on Friday to avoid weekend effect and takes position only for four days in a week i.e. Monday to Thursday. He transfers the amount on Monday morning and withdraws the balance on Friday morning. He desires to make a maximum investment where Value At Risk (VAR) should not exceed the balance lying in his bank account. The position by his manager, as per standing instructions, is taken on the free balance lying in the bank account in the morning on each Monday.

On Monday morning (before opening of the capital market) he has transferred an amount of ₹ 11 Crore to his bank account. A fixed deposit also matured on this Monday. The maturity amount of ₹ 63,42,560 was also credited to his account by the bank in the morning of the Monday. However, Mr. Bull received the intimation of the same in the evening. The bank needs a minimum balance of ₹ 1,000 all the time. The value of Z score, at the required confidence level of 99 percent is 2.33.

The other information with respect to stocks X and Y, which are under consideration for this week, is as under:

X		Y	
Return	**Probability**	**Return**	**Probability**
6	0.10	4	0.10
7	0.25	6	0.20
8	0.30	8	0.40
9	0.25	10	0.20
10	0.10	12	0.10

You are required to recommend a single stock, where maximum investment can be made.

(Exam May – 2023)

Solution:

Working Notes:

(1) Security X

P	x	P (x)	$(x - \bar{x})$	$(x - \bar{x})^2 \times$ Prob.
0.10	6	0.60	-2	0.40
0.25	7	1.75	1	0.25
0.30	8	2.40	0	0
0.25	9	2.25	1	0.25
0.10	10	1.00	2	0.40
		8.00		1.30

Expected Return (R_X) = 8.00%

Variance (σ_X^2) = 1.30

Standard Deviation (σ_X) = $\sqrt{1.30}$

= 1.14

(2) Security Y

P	y	P (y)	$(y - \bar{y})$	$(y - \bar{y})^2 \times$ Prob.
0.10	4	0.40	-4	1.60
0.20	6	1.20	-2	0.80
0.40	8	3.20	0	0
0.20	10	2.00	2	0.80
0.10	12	1.20	4	1.60
		8.00		4.80

Expected Return (R_Y) = 8.00%

Variance (σ_Y^2) = 4.80

Standard Deviation (σ_Y) $= \sqrt{4.80}$

$= 2.19$

	Amount
Amount Transferred	₹ 1,10,000,000
Maturity Proceeds of Fixed Deposit	₹ 63,42,560
Amount available in bank account	₹ 1,16,342,560
Minimum balance to be kept	₹ 1,000
Available amount which can be used for potential investment for 4 days	₹ 1,16,341,560

4 Days VAR = ₹ 1,16,341,560

4 Days VAR = 4 Days S.D. × 2.33

₹ 1,16,341,560 = 4 Days S.D. × 2.33

4 Days S.D. (₹) $= \dfrac{₹\ 1,16,341,560}{2.33}$

= ₹ 49,932,000

1 Day S.D. (₹) $= ₹\ 49,932,000\sqrt{\dfrac{1}{4}}$

= ₹ 24,966,000

Stock X

1 day S.D. (%) = 1.14%

Maximum possible Investment $= \dfrac{₹\ 24,966,000}{1.14\%}$

= ₹ 2,190,000,000

Stock Y

1 day S.D. (%) = 2.19%

Maximum possible Investment $= \dfrac{₹\ 24,966,000}{2.19\%}$

= ₹ 1,140,000,000

Recommendation: Position should be taken in X.