PS – 333

# II Semester M.Com. Examination, November/December 2022
## (CBCS Scheme) (2021 – 22)
## COMMERCE
## 2.2 : Risk Management and Derivatives

Time : 3 Hours Max. Marks : 70

SECTION – A

1. Answer **any seven** questions out of ten. **Each** question carries **two** marks. **(7×2=14)**

   a) State any two benefits of risk management.
   b) Mention any two challenges of risk management.
   c) Give the meaning of credit risk.
   d) State any two sources of credit risk.
   e) Give an example of operational risk.
   f) What is the benefit of VaR ?
   g) What do you mean by pure risk ?
   h) What is American Option ?
   i) What is option premium ?
   j) What are currency swaps ?

SECTION – B

Answer **any four** questions out of six. **Each** question carries **five** marks. **(4×5=20)**

2. Briefly explain the role of risk management in Banks.
3. Explain the tools of credit risk management.
4. Describe the Operational Risk Management Process.
5. Distinguish between forwards and futures.

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6. A certain share index provides a dividend yield of 3.5% per annum. The current value of the index is 1003. The continuously compounded risk-free rate of return is 8%.
   i) Find the value of a one-month futures contract on the given index per unit.
   ii) Find the value of a one-month futures contract on the given index assuming that each contract has 200 units.

7. Companies A and B have been offered the following rate per annum on a $20 million five-year loan:

| | Fixed rate | Floating rate |
|---|---|---|
| **Company A** | 12% | LIBOR + 0.1% |
| **Company B** | 13.4% | LIBOR + 0.6% |

Company A requires a floating rate loan. Company B requires a fixed rate loan. Design a swap that will not a bank acting as intermediary 0.1% per annum and be equally attractive to both companies.

## SECTION – C

Answer **any two** questions out of four. **Each** question carries **twelve** marks. **(2×12=24)**

8. Describe the various functions of derivative market.

9. On January 1, 2003 an investor has a portfolio of 5 shares as given here :

| Security | Price | No. of Shares | Beta |
|---|---|---|---|
| A | 59.50 | 5000 | 1.05 |
| B | 81.85 | 8000 | 0.35 |
| C | 101.10 | 10000 | 0.80 |
| D | 125.15 | 15000 | 0.85 |
| E | 140.50 | 1500 | 0.75 |

The cost of capital to the investor is 12.5% per annum.

You are required to :

a) Calculate the beta of his portfolio.

b) Calculate the theoretical value of the NIFTY futures for February.

c) If its current value is 1005 and NIFTY futures have a minimum trade lot requirement of 200 units, obtain the number of contracts of NIFTY he needs to sell in order to get a full hedge until February for his portfolio. Assume that the futures are trading at their fair value.

d) Calculate the number of futures contracts the investor should trade if he desires to reduce the beta of his portfolio of 0.7.

10. From the following information, prepare the margin account of the trader who has taken the long position : Number of contracts – 1; Number of units per contract – 50; Price per unit on day 1 – Rs. 700; Initial Margin – 12%; Maintenance margin – 75%.

| **Day** | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|
| **Closing price** | 693 | 682 | 663 | 648 | 623 | 610 | 633 | 638 | 621 |

11. Write a note on :

a) Risk Management Process.

b) Swaps.

c) Types of Market risk.

## SECTION – D

Answer the following question. **(1×12=12)**

12. From the following information relating to ABC Ltd. Identify the values of Call and Put options using Black and Scholes model.

| | | |
|---|---|---|
| Current price of the shares | – | Rs. 120 |
| Exercise price | – | Rs. 115 |
| Time to expiry | – | 3 months |
| Standard deviation | – | 0.6 |
| Continuous compounded risk free rate | – | 10% |
| Dividend expected | – | Nil |