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Printed Page:-4 **Subject Code:- BMBAMF0411**

Roll. No:

NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA
(An Autonomous Institute Affiliated to AKTU, Lucknow)
MBA MF
SEM: IV - THEORY EXAMINATION (2025 - 2026)
Subject: Financial Derivatives and Risk Management

Time: 3 Hours **Max. Marks: 100**

General Instructions:

IMP: *Verify that you have received the question paper with the correct course, code, branch etc.*

1. *This Question paper comprises of* ***three Sections -A, B, & C.*** *It consists of Multiple Choice Questions (MCQ's) & Subjective type questions.*

2. *Maximum marks for each question are indicated on right -hand side of each question.*

3. *Illustrate your answers with neat sketches wherever necessary.*

4. *Assume suitable data if necessary.*

5. *Preferably, write the answers in sequential order.*

6. *No sheet should be left blank. Any written material after a blank sheet will not be evaluated/checked.*

SECTION-A 20

1. Attempt all parts:-

(1.1) _____ is derivative in financial terms.(CO1,K1) 1

(a) A stock
(b) A bond
(c) A contract based on an underlying asset
(d) A loan

(1.2) _____is considered a derivative.(CO1, K2) 1

(a) Mutual Fund
(b) Certificate of Deposit
(c) Option
(d) Savings Account

(1.3) Select the characteristic that distinguishes futures from forward contracts.(CO2,K2) 1

(a) Custom settlement
(b) OTC traded
(c) Standardization
(d) Confidential terms

(1.4) Choose the primary purpose of a futures exchange.(CO2,K2) 1

(a) Guarantee profits
(b) Provide anonymity
(c) Facilitate standardized trading
(d) Avoid taxes

(1.5) Choose the variable in Black-Scholes that represents expected stock price 1

fluctuations.(CO3,K2)

(a) Time to maturity
(b) Interest rate
(c) Volatility
(d) Strike price

(1.6) Recognize the factor directly affecting the time value of options.(CO3,K2) 1

(a) Maturity length
(b) CEO performance
(c) Dividend history
(d) Currency rate

(1.7) Choose the type of swap where fixed interest is exchanged for floating.(CO4,K1) 1

(a) Currency swap
(b) Commodity swap
(c) Interest rate swap
(d) Equity swap

(1.8) Point out the term for the variable rate used in interest rate swaps.(CO4,K1) 1

(a) Prime rate
(b) LIBOR
(c) Discount rate
(d) Inflation rate

(1.9) Identify the primary objective of risk management. (CO5, K1) 1

(a) Maximizing returns
(b) Minimizing taxes
(c) Identifying and mitigating potential losses
(d) Improving liquidity

(1.10) Select the best definition of risk in financial terms.(CO5,K1) 1

(a) Certain gain
(b) Possibility of a loss
(c) Tax evasion
(d) Regulatory delay |

2. Attempt all parts:-

(2.1) Define arbitrage.(CO1,K2) 2

(2.2) Define margin in futures trading.(CO2,K1) 2

(2.3) Define volatility.(CO3,K1) 2

(2.4) Explain equity swap.(CO4,K2) 2

(2.5) Define Value at Risk (VaR).(CO5,K1) 2

SECTION-B 30

Answer any one of the following:-

(3.1) Explain the structure and functioning of derivative markets in India.(CO1,K2) 6

(3.2) Compare OTC markets and exchange-traded derivative markets. and solve the 6

following:
A stock is currently priced at ₹1,000. The risk-free interest rate is 8% per annum (continuous compounding). Find the 6-month forward price. (CO1, K3)

Answer any one of the following:-

(3.3) Explain the concept of margin in futures trading. (CO2,K2) 6

(3.4) Explain intrinsic value of options and solve the following: (CO2,K3) 6
An investor buys 3 futures contracts of a stock index at 18,500. Each contract represents 50 units. If the index rises to 18,920 at expiry, calculate the profit earned by the investor.

Answer any one of the following:-

(3.5) Discuss assumptions of the Black-Scholes model.(CO3,K3) 6

(3.6) Explain hedging using index options.(CO3,K4) 6

Answer any one of the following:-

(3.7) Discuss the role of swaps in risk management and solve the following: 6
A bank offers a loan at **LIBOR + 2%**. If the LIBOR rate is 5.5%, calculate the effective interest rate charged on the loan. (CO4,K3)

(3.8) Analyze the impact of swaps on financial stability.(CO4,K4) 6

Answer any one of the following:-

(3.9) Explain market risk and credit risk.(CO5,K2) 6

(3.10) Explain RBI regulations for derivatives in India.(CO5,K2) 6

SECTION-C 50

4. Answer any one of the following:-

(4.1) Evaluate the impact of derivatives on price discovery mechanisms.(CO1,K5) 10

(4.2) Examine the role of SEBI in regulating derivative markets.(CO1,K4) 10

5. Answer any one of the following:-

(5.1) Discuss pricing of futures using cost of carry model and solve the following: 10
The spot price of gold is ₹70,000 per 10 grams.
Storage cost is ₹500.
Risk-free interest rate is 10% per annum.
Time to maturity is 1 year.
Calculate the futures price using the cost of carry model. (CO2, K3)

(5.2) Analyze currency futures and evaluate their role in hedging exchange rate risk (CO2, K4) 10

6. Answer any one of the following:-

(6.1) Analyze payoff of call and put options and solve the following: 10
Given:

- Current stock price ₹100
- Strike price K=₹95
- Risk-free interest rate 10%
- Time to maturity 1 year

- $N(d_1)=0.72$
- $N(d_2)=0.66$

Calculate the value of the European call option using the Black–Scholes model. (CO3, K4)

(6.2) Analyze ATM, ITM and OTM options and evaluate their applications (CO3, K4) 10

7. Answer any <u>one</u> of the following:-

(7.1) Analyze forward rate agreements and evaluate their role in risk management (CO4, K4) 10

(7.2) Explain hedging using swaps and solve the following: (CO4, K4) 10
An Indian company borrows funds at **MIBOR + 1.75%**. If the current MIBOR is 6.25%, determine the total borrowing rate.

8. Answer any <u>one</u> of the following:-

(8.1) Discuss the importance of risk management in modern financial markets. Explain the role of diversification, hedging, and insurance in reducing risk. (CO5, K2) 10

(8.2) Analyze systematic and unsystematic risk and evaluate their impact (CO5, K4) 10