

- (ii) Explain the convergence of Forward and Spot Prices.
- (iii) Describe Basis Risk.
- (iv) Discuss factors affecting Call Premiums.

[This question paper contains 8 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 1685

I

Unique Paper Code : 2922073501

Name of the Paper : Financial Derivatives

Name of the Course : BBA (FIA)

Semester : V

Duration : 3 Hours

Maximum Marks : 90

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Use of a scientific (non-programmable) calculator is permitted.
3. No negative marking.
4. Marks are indicated against each question.
5. Attempt any six out of the seven questions provided.

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1. Attempt all parts (5×3=15)

(i) Explain VAR Margin.

(ii) Describe the contract cycle.

(iii) Suggest and explain a strategy suitable for a bullish market.

(iv) Explain the concepts of contango and backwardation.

(v) Describe Impact Cost.

2. (a) Given: Spot Price = 500, Strike Price = 485, 45-day Call Premium = 5, and Interest Rate = 5%.
(7.5)

(i) Can you earn risk-free profit?

(ii) What trades would you execute to earn risk-free profit?

(iii) Calculate the worst-case profit.

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Additional Information :

• Interest rate = 12%

• Bank charges = 10 paise per trade

Calculate the net cash inflow/outflow for Mr. Sam.

(b) Calculate the 45-day Call Premium given: (7.5)

• 45-day Put Premium = 5

• Spot Price = 222

• Strike Price = 222

• $r = 5\%$

7. Attempt any **three** : (5×3=15)

(i) Differentiate between Forward Contracts and Futures Contracts.

P.T.O.

- $S \text{ (GBP/INR)} = 100$
- $K \text{ (GBP/INR)} = 100$
- $r \text{ (India)} = 5\%$
- $r \text{ (UK)} = 3\%$
- $\sigma \text{ (volatility)} = 22\%$
- $T \text{ (time to expiry)} = 1 \text{ month}$

6. (a) On January 1, 2024, Mr. Sam, an exporter, entered into a forward contract with a bank to hedge 100,000 USD on March 31, 2024, at 75.40. However, due to a delay, Mr. Sam requested a 1-month extension on the maturity date. (7.5)

Interbank rate on March 31, 2024:

- Spot Rate: 85.22 – 85.27
- One-Month Premium: 15/20

(iv) Calculate the best-case profit.

(v) Calculate the profit/loss if the spot price is 1000 at expiry.

- (b) Using the 1-period binomial option pricing method, calculate the Call and Put Premiums given : $S = 889$, $K = 880$, Up Factor = 1.21, Down Factor = 0.88, and Interest Rate = 4%. (7.5)

3. (a) Suppose you are a trader expecting a significant price move in a security but are uncertain about the direction. Which strategy would you choose and why? Explain using an example and illustrate the payoff of the strategy.

Option :

(i) Strip Strategy

(ii) Strap Strategy

(iii) Straddle Strategy (7.5)

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(b) Calculate the initial margin for ABC Ltd.
given : (7.5)

- Standard Deviation of log return (previous 6 months) = 1.15%
- Previous day's closing price = 555
- Current day's closing price = 600
- ABC Ltd. traded more than 80% in the past 6 months and has less than 1% impact cost.

(a) Calculate the Call and Put Premiums given:
(7.5)

- S (stock price) = 555
- X (strike price) = 525
- r (risk-free rate) = 5.5%
- σ (daily volatility) = 1%
- t (time to expiry) = 45 days

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5. (a) Suppose the 45-day Call and Put Premiums for
Strike Prices K1 and K2 are as follows, with an
interest rate of 5%. (7.5)

Strike Price	Call Premium	Put Premium
K1 = 100	18	7
K2 = 130	5	12

Answer the following :

- Does an arbitrage opportunity exist?
- If yes, what trades would you execute to earn risk-free profit?
- What is the maximum risk-free return if the stock's closing price is Rs.150 on the option's expiration day?

(b) Calculate the Call and Put Premiums given:
(7.5)

P.T.O.