

5004

4

- One-Month Premium: 15/20

Additional Information for all cases:

- Interest rate = 12%
- Bank charges = 1.0% per trade

5. Given: Spot Price = 1145, Strike Price = 1140, 1.5-month Call Premium = 7.5, and Interest Rate = 5%.
(18)

Answer the following :

- (a) Can you earn a risk-free profit? Show your working.
- (b) What trades would you execute to earn this risk-free profit?
- (c) Calculate the worst-case profit.
- (d) Calculate the best-case profit.
- (e) Draw the payoff diagram.
- (f) Determine the range of Call Premiums in which arbitrage is not possible.

6. Write short notes on the following : (18)
- (i) Extreme Loss Margin
 - (ii) Contango
 - (iii) Futures Contract
 - (iv) Arbitrage
 - (v) Open Interest
 - (vi) Liquidity

(500)

[This question paper contains 4 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 5004 K

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 **five** out of the **six** questions provided.

1. Calculate the Call and Put premiums without using Put-Call Parity. (18)

Given :

- Spot Price (S): Last two digits of your University Examination Roll Number + 10 (If the last two digits are 00, then Spot = 10; if 01, then Spot = 11; if 99, then Spot = 109)

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- Interest Rate (r): Last digit of your University Examination Roll Number (If the last digit is 0, then $r = 0\%$; if 9, then $r = 9\%$)
 - Strike Price (K): Equal to Spot
 - Up Factor (u): 1.2
 - Down Factor (d): 0.8
 - Time (T): 1 year
2. Calculate the Call and Put Premiums given: (18)
- S (GBPYEN) = 200
 - K (GBPYEN) = 201
 - r (Japan) = 5%
 - r (UK) = 3%
 - σ (volatility) = 22%
 - T (time to expiry) = 1 month
3. Suppose the 1.5-month Call and Put Premiums for the ATM Strike price of 100 are 5 and 15. If the interest rate is the Last digit of your university examination roll number (if the last digit is 0, then the Interest rate will be 0%, if the last two digits are 9, then the Interest rate will be 9%). (18)

Answer the following :

- Does an arbitrage opportunity exist?

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- 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?
4. On January 1, 2025, Mr. Rohit, an exporter, entered into a forward contract with a bank to hedge 100,000 USD on March 31, 2025, at 88.40. (18)

Calculate the net cash inflow/outflow for Mr. Rohit in the following cases.

- Mr. Rohit received such an amount on February 28th, 2025.

Interbank rate on Feb 28, 2025:

- Spot Rate: 88.22 - 88.27
- One-Month Premium: 15/20
- Mr. Rohit informed the bank about the cancellation of this contract on 28th Feb 2025.

Interbank rate on Feb 28, 2025:

- Spot Rate: 88.22 - 88.27
- One-Month Premium: 15/20
- Mr. Rohit requested the bank, a 1-month extension on the maturity date.

Interbank rate on March 31, 2025:

- Spot Rate: 88.22 - 88.27

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