Seat No.: _____   Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY
MBA PART TIME – SEMESTER V– EXAMINATION – WINTER 2021

Subject Code: 4559921   **Date: 17/02/2022**
Subject Name: Financial Derivatives
Time: 02:30 PM TO 05:30 PM   **Total Marks: 70**
Instructions:
   1. **Attempt all questions.**
   2. **Make suitable assumptions wherever necessary.**
   3. **Figures to the right indicate full marks.**

Q.1   Define the terms   **14**
            (a) Speculation
            (b) Theta
            (c) Contango
            (d) At-The-Money
            (e) Initial Margin
            (f) Upside Risk
            (g) Covered Call Writing

Q.2 **(a)** Canara Banks sells a 1x4 FRA on April 1 with a principal amount of   **07**
            Rs.5million at an AR of 8%. The RR on the FRA is the MIBOR, and the cost
            of the loan is MIBOR +100. On the settlement date, which is one month ahead,
            the MIBOR is 6.4% and the RR is MIBOR +100. A year is said to have 360
            days. What will be the settlement payment?
   (b) Write a short-note on Spot Vs. Derivatives Markets.   **07**

OR

   (b) Write a short-note on types of risk faced by the business.   **07**

Q.3 **(a)** Explain the trading and settlement process.   **07**
   (b) A jute packaging unit has planned of 4,300 kg of jute to be sold six month **07**
            later. The spot price of jute is Rs 1900 per kg and 6-m future on the same is
            trading at Rs 1850 per kg. The price is expected to fall to as low as Rs 1700
            per kg six month later. What can the jute packaging unit do to mitigate its risk
            of reduced profit? If it decides to make use of future market what would be the
            effective realized price for its sale when the spot and futures price were Rs
            1750 and 1755?

OR

Q.3 **(a)** State the difference between the forward and futures contract.   **07**
   (b) Sun TV futures contract has a lot size of 100 shares. Assume that you take a **07**
            short position on 10 Sun TV futures contracts at INR 271.25 at 11 a.m. on
            September 6. Assume that the initial margin is 10% of the initial contract value
            and the maintenance margin is 8% of the initial margin. The following table
            shows the settlement prices on the days of trading between September 6 and
            September 10. You close out your position on September 10. Prepare a table
            showing the daily margin balances in your account.

Date	Settlement Value of the Index (INR)
September 6	271.25
September 7	273.80
September 8	276.90
September 9	272.50
September 10	272.10

Q.4 **(a)** Write a short-note on Swap. **07**

(b) Suppose that the Nifty Midcap 50 Index value is 6,200 on September 22, and the December index futures with expiry on December 29 is trading at 6,260 and the contract multiplier is 300, and the risk-free rate is 8%. The dividend yield on the index is 1.8%. **07**

    1. How would you arbitrage?

    2. On December 29, the market has moved down such that the index value is 5,850. What would be your arbitrage profit?

OR

Q.4 **(a)** Write a note on Spread Positions in Options. **07**

(b) On March 10, India Cements shares are selling at Rs.134.50. You believe that the India Cements share price is likely to increase in the next three days. You want to speculate on this information. You find that there are futures contracts available on India Cements with a contract size of 1,450. The March contract with expiry on March 29 is selling at Rs.142. You decide to speculate using 10 contracts. **07**

    1. Explain how you would speculate using a futures contract?

    2. If the market price of India Cements is Rs.140 and the March futures price is Rs.148 on March 13, what would be your speculative gain?

    3. What is the peculiarity of speculation?

Q.5 **(A)** Assume that an SBI share is currently trading at Rs.2,300. There is also a call option and put option on SBI exercise price of Rs.2,400 with 90 days to maturity. The call option is priced at Rs.165. Risk free rate is 8%. Calculate price of Put Option according to Put-Call Parity. **07**

(B) Infosys stock is selling at INR1,130 on September 1. There exists a call option on Infosys with the expiry on October 29 and an exercise price of INR1,150. It is estimated that by October 29, the Infosys share price could either increase by 6% or decrease by 4%. The risk-free rate is 8%. Calculate the call price by using the single-period Binomial Options Pricing Model. The risk-free rate is non-compounding. **07**

OR

Q.5 **(A)** Assume that on June 1, Tata Steel is selling at INR488.95 and there is a call option on this stock expiring on June 29 with an exercise price of INR500. The risk-free rate is 12%, and the volatility of the stock is estimated as 25%. Calculate the price of the call according to Black-Scholes formula. **07**

(B) Explain the Gain or losses made by a Put Buyer and Put Writer using the imaginary strike price. **07**

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