Seat No. /Enrollment No.___________

GUJARAT TECHNOLOGICAL UNIVERSITY
MBA-SEMESTER-III-EXAMINATION-WINTER-2024

Subject Code: 4539222 **Date: 16/12/2024**
Subject Name: Financial Derivatives
Time: 10:30 AM TO 01:30 PM **Total Marks: 70**

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**
4. **Use of simple calculators and non-programmable scientific calculators are permitted.**

			Marks
Q.1		Explanation the following terms: 1. Futures Contract 2. ITM 3. Call Option 4. Forward contract 5. Exchange Traded Contract (ETC) 6. Terminal Value 7. Arbitrager	**14**
Q.2	**(a)**	What is Derivatives? Explain types of derivative contracts.	**07**
	(b)	What is Futures contract? Differentiate between Forward and Futures.	**07**
		OR	
	(b)	What is risk management? Explain different types of Risk.	**07**
Q.3	**(a)**	Write a Short note on Greek letters.	**07**
	(b)	What is options contract? Explain Factors affecting options premium.	**07**
		OR	
Q.3	**(a)**	The investor is interested for making investment in SBI, he requires expert opinion from the following information is available for SBI. Stock price = Rs.300 Exercise price = Rs.320 Time to expiration = 90 days Find the Value of Call premium by using BSM (Black Scholes Model) If Standard deviation of the Stock (Volatility) = 0.20 & continuously compounded rate of return = 10	**07**
	(b)	Share price of XYZ company on 5th September is Rs.500, risk free rate is 8% per annum, Calculate the price for 25th November futures contract assume stock does not pay dividend during the maturity period. 1. What is the value of contract is one contract consists of 500 shares and investor enters into 2 contract of LONG futures.	**07**
Q.4	**(a)**	Using the following data, prepare the margin account of the investor. Assume that if a margin call is made at any time, the investor would deposit the amount called for. Position : Long Contract Size : 500 units Unit Price : Rs.100 No. of contracts : 10	**07**

Initial Margin : 10 %
Maintenance Margin : 3/4ths of Initial margin
Date of Contract : August 5
Closing Prices

Date	August 6	August 7	August 8	August 9	August 10	August 11	August 12
Price	102	105	109	104	102	108	110

(b) Write a Short note on ITM, OTM and ATM options. **07**

OR

Q.4 **(a)** On July 20, the spot price of Cashew is Rs.3100 per 20 kg and price of August Cashew futures with expiry on August 15 is Rs.850 per 5 Kg. the futures contracts are available for 5 Kg and multiple thereof. The standard deviation of spot price is Rs.160 and standard deviation of futures price is Rs.148. The correlation between spot and futures price is estimated to be 0.99. The Madras Cashew corporation is planning to sell 100 Kg of Cashew on August 15 and wants hedge price risk. **07**

1. Find Hedge ratio, Hedging effectiveness.
2. Find the number of contracts require to enter.

(b) An investor has purchased shares of XYZ Ltd at Rs.400 from cash market. He is entering into writing call options with Strike price of Rs. 425 with a premium of Rs. 27. He has also purchased put options with Strike price of Rs. 410 by paying Rs.20 as premium. Prepare the payoff chart and Gain/loss for the following prices and also NAME the strategy. **07**

Prices	371	378	385	399	415	430	450	480

Q.5 **CASE STUDY:**

The investor is interested for making investment in ABC Ltd., he requires expert opinion from the following information is available for ABC Ltd.
Stock price = Rs.100
Exercise price = Rs.115
Time to expiration = 90 days
Risk free rate =8%

(a) The stock can go up by 20% or fall by 10% find the value of CALL premium by using Two- period Binomial Options Pricing Model (BOPM). **07**

(b) The stock can go up by 20% or fall by 10% find the value of PUT premium by using Two- period Binomial Options Pricing Model (BOPM). **07**

OR

(a) The stock can go up by 15% or fall by 8% find the value of CALL premium by using Two- period Binomial Options Pricing Model (BOPM). **07**

(b) The stock can go up by 15% or fall by 8% find the value of PUT premium by using Two- period Binomial Options Pricing Model (BOPM). **07**

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