Seat No.: _____   Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY
MBA – SEMESTER -III– EXAMINATION – WINTER 2021

Subject Code: 4539222   **Date: 23-02-2022**
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.**

Q.1	Define:		14
	1.	Risk free security	
	2.	Equity swaps	
	3.	Cost of carry	
	4.	Covered options	
	5.	Butterfly spread	
	6.	Swaptions	
	7.	Basis risk	

Q.2 **(A)** State the assumptions underlying the black and scholes model with proper justification   07

(B) Using the following data, calculate the values of call and put option using black and scholes model: 07

Current price of the share	Rs. 486
Exercise price	Rs. 500
Time to expiration	65 days
Standard deviation	0.54
Continuously compounding rate of interest	9% p.a.
Dividend expected	Nil

OR

(B) Explain two ways in which a Bull spread can be created. Include the payoff table for the strategy   07

Q.3 **(A)** Define and Differentiae forwards and futures.   07

(B) Consider a 6 month forward contract on 100 shares with a price of Rs 1000 each. The risk free rate of interest semiannually compounded is 9 % per annum. The share is expected to yield a dividend of Rs.6 in 3 months from now. Determine the value of the forward contract.   07

OR

(A) Explain various Greek letters in Options   07

(B) Gujarat Motors are selling are INR 991.55 on May 10. The contract size for Gujarat Motors is 200, and the futures expire on June 29. The Risk free interest rate is 7% (Continuous compounding) What will be the June futures price on May if no dividend will be paid before June 29?   07

Q.4 **(A)** Explain the concept of moneyness in options. How it affects the options premium? **07**

(B) ITC share shares are selling at for INR 235 on April 18. Futures contract are available with maturity on April 29 and June 29. ITC is expected to pay dividend of INR 40 per share on June. The Risk free rate is 8%. Calculate the price at which futures contract of April 29, and June 29 is selling? **07**

OR

(A) "Futures contracts are improvised forward contracts." Do you agree with the statement – Explain the statement in the light of difference between forward and future contract. **07**

(B) What do you mean risk and Derivatives? What are the Derivatives and how it is used for management of Risk? Explain in detail. **07**

Q.5 **Case Study:**

Hyundai motors exports cars to Germany, and every three months, it receives EUR 500,000 from car shipments. On March 1, the exchange rate between the Indian Rupee and Euro is EUR 1= INR 80.7242. The euro interest rate is 6% per annum, while interest rate in India is 9% per annum. Hyundai wants to hedge its euro receipt through forward contract for the next 6 months. The 180-days forward rate is EUR 1= INR 81.5642.

Questions

(A) Calculate 90 days and 180 days theoretical forward rate. **07**

(B) If there is an arbitrage opportunity, calculate the arbitrage profit for EUR 500,000. **07**

OR

Case Study:

You believe that the share price of Biocon is likely to increase from its price of INR 238.50 on March 15. There are futures contracts available on Biocon with expiry on June 30 at a futures price of INR 245. The contract size for Biocon futures is 1800 shares. You plan to buy 9000 Biocon shares on 30th June. Since the price at which you can buy Biocon shares on 30th June, is uncertain on March 15, you plan to hedge using futures.

(A) Explain how you would hedge? **07**

(B) What would be the effective selling price for the share if the market price of the given share on 30th of June is INR 260 **07**

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