Seat No.: _____   Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY
MBA– SEMESTER - III-EXAMINATION- SUMMER-2023

Subject Code: 1539504   **Date: 01/07/2023**
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.
4. Use of simple calculators and non-programmable scientific calculators are permitted.

Q.1	Explain the following terms:	14
	a. Implied volatility	
	b. Basis and basis risk	
	c. Derivatives	
	d. Vega	
	e. Backwardation	
	f. Open interest	
	g. Swaption	
Q.2	(a) Compare and contrast futures and forwards.	7
Q.2	(b) Calculate money ness of put and call options from the information given.	7

Underlined security: SBI bank
Spot Price: Rs 640
Date of expirty: 24 th Nov 2022
Chain of options

Strike Price	Call Option	Put Option
Rs	ITM/OTM	ITM/OTM
625		
630		
635		
640		
645		
650		
655		

(b) The price of a Reliance share at the NSE is Rs.1980. The risk free rate is 10% per annum. 1) if a 6-m future contract for delivery free rate is 10% p.a. 1) if a 6-m future contract for delivery of 100 shares is available at Rs.2100, can you take advantage of the situation? 2) if a 6-m future contract for delivery of 100 shares is available at Rs.2000, can you take advantage of the situation?   7

Q.3   (a) Explain the functions of derivatives market.   7

(b) A stock is currently trading at Rs. 50. It can either go up by 20% or fall by 20% in a period of three months. If the risk-free interest rate is 8% p.a., find the value of a call & a put with an exercise price of Rs.50 & maturity of three months using the risk-neutral method under the binomial model for a single period. Verify the put-call parity also.   7

OR

Q.3   (a) What is the relationship between the call and put prices for European options? What are the preconditions for put call parity theory?   7

(b) Why is an option writer is required to post margin while an option buyer normally is not? Discuss.   7

Q.4   (a) Analyze the factors influencing sensitivity of option price. Explain all 5 parameters briefly.   7

(b) How is a calendar spread formed? Explain with example.   7

OR

(a) What is currency Swap? Classify the different types of currency Swaps.   7

(b) Bajaj Auto is trading at Rs 3350 on 1 st Jan 2022. A dividend or Rs 140 is expected on 31 st March 2022. The risk free interest rate is 4% p.a. and the stock price has volatility of 36%. What should be the value of a call option with an exercise price of Rs.3000 with maturity on 31 st March 2022?   7

Q.5   On September 1, gold is trading at Rs.13,500 per 10 grams. Tanishq Jwellers requires 3000 grams of gold on January 1 for preparing new jewellery for the marriage season next year. The gold price has been highly volatile in the past 3 months, and experts in their opinion as to whether the gold price would increase or decrease in the future. Tanishq Jewellers would like to hedge against the price risk and is looking at the gold futures contract. There is a future contract available with expiry on Decemebr 20, and the futures price is Rs.14,100.

(a) Explain how Tanishq Jewellers can use the gold futures to hedge.   7

(b) On Decemeber 20, the gold price in the spot market is Rs.14,600. Tanishq Jewellers would buy the required gold on January 1. What would be the effective price per 10 gram for Tanishq Jewellers?   7

OR

(a) Explain the risks attached to long hedged in context of the case.   7

(b) On Decemeber 20, the gold price in the spot market is Rs.14,000. Tanishq Jewellers would buy the required gold on January 1. What would be the effective price per 10 gram for Tanishq Jewellers?   7

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