

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

**Subject Code: 1539504****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.

| Q. No.    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Marks |
|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| Q.1       | Explain the following:<br>(a) Types of order<br>(b) ETM v/s OTC<br>(c) Mark to Market<br>(d) Margin system<br>(e) Hedge ratio<br>(f) Delta and Vega of Options<br>(g) Factors affecting option pricing                                                                                                                                                                                                                                                                | 14    |
| Q.2       | (a) Elaborate the term Derivatives. Explain the futures and forwards contracts with its payoffs. Also Compare and Contrast the future and forward contract of derivatives                                                                                                                                                                                                                                                                                             | 07    |
|           | (b) What do you mean by options? Describe the various types of options with its payoff lines and its use for hedging.                                                                                                                                                                                                                                                                                                                                                 | 07    |
| <b>OR</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |       |
|           | (b) "Growth of Derivative market in India is remarkable in last two decades" Justify the statement with relevant data. Also Compare and contrast OTC and ETM.                                                                                                                                                                                                                                                                                                         | 07    |
| Q.3       | (a) Explain the term Hedging. Describe principle of hedging and various types of hedging and its application in detail.                                                                                                                                                                                                                                                                                                                                               | 07    |
|           | (b) Suppose the S&P CNX Nifty index value is 4,958 points on April 17, and you believe that the market will do very well in the near future. The June index futures contract is trading at 4,990, and the contract multiplier is 50.<br>(i) How would you speculate using futures?<br>(ii) On April 25, the market has moved up such that the index value is 5,012 and the futures price is 5,017.6, and you decide to close the position. What would be your profit? | 07    |
| <b>OR</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |       |
| Q.3       | (a) What do you mean by Swaps? Explain the different types of Swaps in detail.                                                                                                                                                                                                                                                                                                                                                                                        | 07    |
|           | (b) HCL Technologies Ltd. shares are selling at INR 991.55 on May 10. The contract size for of futures is 200, and the futures expire on June 29. The risk-free interest rate is 7%. What will be the June futures price on May 10 if no dividend will be paid before June 29? If HCL Technologies Ltd is expected to pay a dividend of INR 40 on June 5, what would be futures price?                                                                                | 07    |

- Q.4** (a) Describe Black and Scholes Model of options Pricing. Also differentiate it with Binomial Model of Options Pricing **07**
- (b) On July 1, IOC shares are selling at INR 1,185. There are call options and put options available with the exercise date of September 30 and an exercise price of INR 1,260 on IOC shares with a contract size of 225. It is estimated that the stock price could be either INR 1,300 or INR 1,100 on the expiry date of September 30. The risk-free rate is 8%. Calculate the price of a call option on July 1. **07**
- OR**
- Q.4** (a) Discuss the various options trading strategy in detail with its payoff lines. **07**
- (b) Assume that Tata Motors stock is currently selling for INR 750. There is a call option on Tata Motors with a maturity of 90 days and an exercise price of INR 800. The volatility in the stock price is estimated to be 22%. The risk-free rate is 8%. Determine the price of a call option that has a maturity of 90 days. **07**
- Q.5** **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 1,800 shares. You plan to buy 9,000 Biocon shares on June 20. Since the price at which you can buy Biocon shares on June 20 is uncertain on March 15, you plan to hedge using futures.
- (a) What type of hedging is appropriate? Explain why. **07**
- (b) What would be the result of your hedge, that is, what is the effective price at which you would sell the shares if, on June 20, the price of Biocon shares is INR 260 and the June futures price is INR 262? **07**
- OR**
- Q.5** (a) Explain how you would hedge? **07**
- (b) If the share price is INR 220 and the futures price is INR 224 on June 20, what would be net cost per share? **07**

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