Name:

Enrolment No:

UPES

End Semester Examination, December 2024

Course: Options and Futures | **Semester: V**
Program: INT-BBA-MBA | **Time: 03 hrs.**
Course Code: FINC3064 | **Max. Marks: 100**

Instructions:

SECTION A
10Qx2M=20Marks

S. No.		Marks	CO
Q 1	What is a derivative? a) A financial instrument derived from physical goods b) A financial instrument derived from an underlying asset c) A stock in the derivatives market d) A bond issued by a government	**2**	**CO1**
Q2	Which of the following is NOT an example of an underlying asset in derivatives? a) Commodities b) Foreign exchange rates c) Corporate branding d) Market indexes	**2**	**CO1**
Q3	A forward contract is: a) Standardized and traded on an exchange b) A private agreement between two parties c) Always settled in cash d) Only an agreement to sell assets	**2**	**CO1**
Q4	Which type of option gives the buyer the right to sell an asset? a) Call Option b) Put Option c) Swap Option d) Forward Option	**2**	**CO1**
Q5	A call option gives the holder the right to: a) Buy an asset at a predetermined price b) Sell an asset at a predetermined price c) Trade an asset at market price d) Only acquire dividends on an asset	**2**	**CO1**
Q6	The premium of an option is: a) The intrinsic value of the option b) The strike price of the option c) The price paid to acquire the option d) The market price of the underlying asset	**2**	**CO1**

Q7	Which exchange in India primarily offers trading in currency derivatives? a) NSE b) MCX-SX c) NYSE d) BSE	**2**	**CO1**
Q8	In the Black-Scholes model, which is NOT an input? a) Dividend Yield b) Risk-free interest rate c) Stock price d) Volatility	**2**	**CO1**
Q9	Which option Greek measures sensitivity to volatility? a) Delta b) Theta c) Vega d) Gamma	**2**	**CO1**
Q10	In a bear call spread, maximum loss occurs when: a) Stock price falls moderately b) Stock price rises above the higher strike price c) Stock price remains constant d) Stock price falls below the lower strike price	**2**	**CO1**
SECTION B 4Qx5M= 20 Marks			
Q11	What are the key factors influencing the value of a call option according to the Black-Scholes model?	**5**	**CO2**
Q12	Why do hedgers participate in futures markets, and how does hedging with futures benefit them?	**5**	**CO2**
Q13	What is the difference between American and European options. Why might an investor prefer an American option over a European one?	**5**	**CO2**
Q14	An investor buys a 3-month call option on a stock with a strike price of ₹150, paying a premium of ₹20. At expiration, the stock's market price is ₹180. Calculate the intrinsic value, time value, and net gain or loss for the investor.	**5**	**CO2**
SECTION-C 3Qx10M=30 Marks			
Q15	Explain the mechanics and significance of hedging with currency futures for international businesses. OR Compare and contrast exchange-traded and over-the-counter (OTC) derivatives markets.	**10**	**CO3**

Q16	A commodity producer is concerned about potential price fluctuations in corn over the next four months. The producer has an exposure of 1,500 metric tons of corn. Historical data shows: • Correlation between the spot price and futures price of corn: 0.82 • Standard deviation of spot price changes: 6% • Standard deviation of futures price changes: 7% Each futures contract represents 250 metric tons of corn. Calculate the Optimal Hedge Ratio (OHR) and the number of futures contracts needed to hedge the exposure.	**10**	**CO3**
Q17	Differentiate between Contango and Backwardation in the futures market with suitable examples. Explain why these conditions occur.	**10**	**CO3**
SECTION-D **2Qx15M= 30 Marks**			
Q18	Analyze the differences between a covered call strategy and a protective put strategy. Discuss situations where each strategy would be most appropriate for an investor.	**15**	**CO4**
Q19	Arush, an active trader, anticipates that the share price of XYZ Ltd., currently trading at ₹200, will experience significant volatility following the company’s upcoming quarterly earnings report. However, Rahul is uncertain about the direction of this movement – it could either rise sharply due to strong earnings or drop significantly if the earnings disappoint. To capitalize on this potential volatility, Rahul decides to use a straddle strategy by buying both a call and a put option on XYZ Ltd. with a strike price of ₹200. The option details are as follows: Call option premium: ₹10 Put option premium: ₹12 Based on Rahul's prediction, calculate his net payoff for each of the following potential outcomes for XYZ Ltd.’s stock price after the earnings report: The stock price rises to ₹240. The stock price falls to ₹160. The stock price remains at ₹200. Provide a detailed breakdown of the net payoff for each scenario, including the impact of the premiums paid. OR Explain the advantages and disadvantages of using futures contracts for hedging. Use real-life examples from commodities or financial markets to support your analysis.	**15**	**CO4**