

Name:

Enrolment No:



End Semester Examination, May 2024

Course: Introduction to Derivatives
Program: B.COM (HONS) E.COM/BI
Course Code: FINC3017

Semester: VI
Time: 03 Hrs.
Max. Marks: 100

Instructions: 1. Attempt all questions; 2. Use of calculators including scientific calculators is allowed

SECTION A
10Qx2M= 20 Marks

S. No.		Marks	CO
Q 1	MULTIPLE CHOICE: Choose the one alternative that best completes the statement or answers the question. (Write the question number and the choice letter A, B, C, or D only on your answer sheet).		
1.1	A derivative is a financial instrument whose value is determined by: A) A regulatory body such as the SEBI B) An underlying asset C) Hedging a risk D) Speculation	2	CO1
1.2	BSE SENSEX is a/an A) Price weighted index B) Market Capitalization weighted index C) Equal Weighted (Arithmetic Average) index D) Equal Weighted (Geometric Average) index	2	CO1
1.3	Although derivatives can be used as speculative instruments, businesses most often use them to A) hedge B) offset debt C) appease stockholders D) attract customers	2	CO1
1.4	A contract that gives the owner the right, but not the obligation to sell the underlying asset by a specified date at a specified price is: A) put option B) call option C) swap D) forward	2	CO1
1.5	Default occurs when the issuer of the bond is unable or unwilling to make interest payments when promised. _____ the default risk, _____ is the interest rate. A) Higher, Lower B) Lower, Higher C) Higher, Higher D) whatever, unaffected	2	CO1

1.6	On futures markets, the probability of contract default is lowered through the use of margin requirements and the process of A) careful credit rating checks. B) daily realizations of gains and losses. C) keeping a required imbalance between long and short positions. D) allowing only a discrete number of price changes per day.	2	CO1
1.7	The maximum loss a buyer of a stock put option can suffer is equal to A) the stock price minus the strike price. B) the strike price minus the value of the put. C) the strike price D) the put premium	2	CO1
1.8	In a futures contract the futures price is A) determined by the buyer and the seller when they initiate the contract. B) determined by the futures exchange. C) determined by the buyer and the seller when the delivery of the asset takes place. D) determined independently by the provider of the underlying asset.	2	CO1
1.9	An exporter is expecting a payment of Rs. 5 million to arrive in three months. He is planning to hedge the position using options. He should: A) Buy call options (B) Buy put options C) Write put options D) None of the above	2	CO1
1.10	Speculators take positions in futures markets in order to A) hedge risk exposures. B) coordinate the equilibrium price. C) profit from superior forecasts of future spot prices. D) balance spot market positions.	2	CO1
SECTION B 4Qx5M= 20 Marks			
2.1	What are the main features of forward contracts? How are they different from futures contracts?	5	CO2
2.2	An investor has paid a Rs.3.75 premium to obtain a long position in a put option with an exercise price of Rs.48. What is the price of the underlying asset at which he/she will break even (no profit no loss)?	5	CO2
2.3	How does the payoff of a buyer of a call option differ from the seller of a call option?	5	CO2
2.4	What do you mean by Contract size and lot size in derivatives trading?	5	CO2
SECTION-C 3Qx10M= 30 Marks			
3.1	Consider a 3-month futures contract on the Nifty. The stocks underlying the index provide a dividend yield of 3% per annum, the current value of the index is 22,750 and the continuously compounded risk-free rate is 8% per annum. Based on these figures, what should the price of a three-month future contract on the index be?	10	CO3

3.2	A trader writes(sells) a European put option contract on XYZ share with a strike price of Rs. 50 and a time to maturity of six months. The premium received is Rs 4 per share. The contract size is 100 shares. The price of the XYZ share Rs. 41 in six months. What is the trader's gain or loss?	10	CO3
3.3	What is "marked to market" and "daily settlement" in trading of futures contracts? Illustrate with the help of an example.	10	CO3
SECTION-D 2Qx15M = 30 Marks			
4.1	Suppose you purchase one Research in Motion (RIM) July 105 European call contract at Rs 2 and write (sell) one RIM July 100 European call contract at Rs 5. Each contract is for 100 shares. (The exercise price in this case are Rs 105 and Rs 100 per share and the premium are Rs 2 and Rs 5 respectively. Both are European contracts and both mature in the month of July.) When you buy a European call option on a stock with a certain strike price and maturity and sell a European call option on the same stock with a lower strike price but same maturity you create a bear spread. a) What is the maximum potential profit from your strategy? b) If at expiration, the price of a share of RIM is Rs. 103, what is your profit? c) What is the maximum loss that you could suffer from your strategy? d) What is the stock price at which you can break even?	15	CO4
4.2	The market has received rumour about ABC Corporation's tie-up with a multinational company. This has induced the market price to move up. If the rumour is false, the ABC Corporation's stock price will probably fall dramatically. To profit from both the upside and downside, an investor has purchased one 3-months European call contract with a strike price of Rs. 50 for Rs. 2 premium per share, and paid Rs. 3 per share premium for a 3-months European put contract with a strike price of Rs. 50. Both the call and put contracts are for 500 shares each. When you buy a European call option on a stock with a certain strike price and maturity and buy a European put option on the same stock with the same strike price and same maturity you create a straddle combination. a) If at expiration, the price of a share of ABC is Rs. 40, what is the investor's profit/loss? b) If at expiration, the price of a share of ABC is Rs. 60, what is the investor's profit/loss? c) How high should the price of a share of ABC move up at which the investor breaks-even? d) How low should the price of a share of ABC go down at which the investor breaks-even?	15	CO4