K23P 1444

Reg. No. : .....

Name : .....

III Semester M.Com. Degree (C.B.S.S. – Reg./Supple./Imp.) Examination, October 2023
(2020 Admission Onwards)
COM3C14 : DERIVATIVES AND RISK MANAGEMENT

Time : 3 Hours Max. Marks : 60

SECTION – A

Answer **any four** questions in this Section. **Each** question carries **1** mark for Part (**a**), **3** marks for Part (**b**) and **5** marks for Part (**c**).

1. a) What are 'Currency Derivatives' ?
   b) Determine the futures price from the following :
      Spot price – ₹ 8,50,000/-
      Cost of carry – 12%
      Carry period – 6 months
      Use cost of carry model.
   c) Cite out the need and importance of risk management in the recent scenario.
2. a) State the expectancy hypothesis in future pricing.
   b) Distinguish between straddle and strangle.
   c) Enumerate the process of hedging through futures.
3. a) State the key differences between spot contract and forward contract.
   b) Evaluate the assumptions in capital asset pricing model.
   c) The stock price of Grace Ltd. in spot market is ₹ 450/- and the two-month option contract is ₹450/-. The price of the option is ₹ 20 per share. At what price will the option be at-the-money, in-the-money and out-of-money, if the options are both call and put ?

P.T.O.

4. a) What is 'Option Pay-off' ?

   b) The current market price of a share is ₹ 19 and the call option and put option at a strike price of ₹ 20 are available for ₹ 3 for a period of 3 months. If the risk-free rate is 10%. Identify the arbitrage opportunities. Apply the put-call parity.

   c) Distinguish between 'Systematic Risk' and 'Unsystematic Risk' with examples.

5. a) Expand LIBOR and LIBID.

   b) What is Margin System ? Give its types.

   c) An investor buys 500 shares of X Ltd. at ₹ 210 per share in the cash market. In order to hedge, he sells 300 futures of X Ltd. at ₹ 195 each. Next day, the share price and futures decline by 5% and 3% respectively. He closes his positions the next day by counter transactions. Find out his profit or loss position.

6. a) Support the price of a stock is ₹ 100 and in two periods, it may go up by 20% or down by 20% in each period. Construct the 'Binomial Tree' (Single period).

   b) Calculate the lower bound from the following data :

   Stock price : ₹ 270 per share

   Style of option : European

   Type of option : Call

   Strike price : ₹ 265 per share

   Interest rate : 10% p.a.

   Time to expiry : 6 months

   Dividend : Nil

   c) Outline the important applications of interest rate futures. **(4×9=36)**

SECTION – B

Answer the **two** questions in this Section. **Each** question carries **12** marks.

7. a) "The limitations of forwards and futures led to the emergence of options". Examine this statement keeping in mind the limitations of forwards and futures. Also, tabulate the differences between options, forwards, and futures.

OR

b) From the following information, compute the call option and put option values :

Current market price (S) : ₹ 100 per share

Striking price (X) : ₹ 890 per share

Volatility of share price (σ) : 30%

Risk-free rate (R_f) : 10% p.a.

Time to expiration (t) : 3 months

Use Black-Scholes formula.

8. a) Who are the players in the Indian derivatives market ? Narrate their functions in detail.

OR

b) Write an essay on the "Types of options". Support with valid examples.

(2×12=24)
