



## M.B.A. III Semester Degree Examination, April/May - 2024

### MANAGEMENT

#### Financial Derivatives

#### (NEP)

Time : 3 Hours

Maximum Marks : 70

**Note :** Answer **any five** of the following questions with Question No. **1 (Q1) Compulsory**, each question carries **equal** marks.

1. A firm wants to enter into a two-year currency swap. The firm wishes to pay a fixed rate of 6% in Euros and receive floating sterling (British pounds). The euro payments will be semiannual, and the pound payments will be quarterly, both on a 30/360 day count basis. The principal amounts are £ 40 million and € 70 million. Today, three - month sterling LIBOR (the floating rate) is 5%. Subsequent realizations of three-month sterling LIBOR are as follows :

Time	3-Month Sterling LIBOR (%)
0.25	5.25
0.5	6
0.75	6.3
1.0	6.85
1.25	6.5
1.50	6.2
1.75	6
2.0	6.3

What are the cash flows that the firm will pay and receive, at each date ?

**14**

2. How to determine the Forward price for the following investment assets :

**14**

- (a) Investment asset that generates no income
- (b) Investment asset which generates a known cash income
- (c) Investment assets which generates a known dividend



3. What is option moneyness ? Explain the following concepts. **14**
- In-the Money
  - Out-of the-Money
  - At-the-Money
4. Briefly discuss the factors contributing to growth of financial derivative. **14**
5. From the following information calculate call option value and put option value **14**
- Current market price: ₹ 650 per share  
 Exercise price: ₹ 560 per share  
 Volatility of share price: 30%  
 Risk-free interest rate: 10% p.a  
 Time to expiration: 3.5 months  
 Use Black-Scholes option pricing model
6. (a) What are the assumptions of Black-Scholes option pricing model ? **7**  
 (b) What is arbitrage ? Explain the arbitrage process with hypothetical example. **7**
7. From the following data, calculate : **14**
- Expected stock price
  - Value of an option
  - Option Delta
    - Type of Option = European
    - Stock Price  $a = ₹ 240$
    - Time to expiration = One year
    - Stock price movement in the next year - go up by 25% - go down by 20%
    - Exercise Price = ₹ 260
    - Risk-free interest rate = 5%
    - Risk neutral probability of up move = 0.60
8. Write a short note on :
- Put-Call Parity **5**
  - Equity Swaps **5**
  - Hedgers **4**

