



SRN – 08

M.Com. (Semester – IV) Examination, April 2018
COO 4A2 : DERIVATIVES MARKET (OA-18)

Duration : 3 Hours

Max. Marks : 60

- Instructions :**
- 1) This paper consists of **nine** questions carrying **equal** marks.
 - 2) Question No. 1 consists of **5 compulsory** questions of **2 marks each**.
 - 3) Answer **any five** questions from question 2, 3, 4, 5, 6, 7, 8 and 9.
 - 4) **Each** question carries **10** marks. Figures to the **right** indicate marks.
 - 5) Present value and Logarithm Tables will be provided on request.

1. Answer the following short questions : (5×2=10)

- A) Distinguish between Hedger and Speculator.
- B) How do you measure the pay of futures contract ?
- C) Define the Cost of Carry Model.
- D) Straddles Vs Strangle Strategies ?
- E) You are given the following information :

Spot

(Euro/Dollar) : 0.7940/0.8007

(Dollar/Pounds) : 1.8215/1.8240

3-months Swap Points : 25/35

(Euro/Dollar) : 25/35

(Dollar/Pounds) : 35/25

Calculate 3-month Euro/Pounds Forward Rate.

2. A) Define "Financial Derivative". Discuss in brief the players in Derivatives Market. 6
- B) Discuss in brief the major recommendations of LC Gupta on Derivatives market. 4

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3. A) Differentiate between Stock Futures and Stock Index Futures. 4
B) What is Hedging ? Discuss Long Hedge and Short Hedge with the help of illustrations. 6
4. A) What is Option Contract ? Illustrate the pay-off of Call and Put Options. 6
B) Discuss in brief the factors determines the Option Price. 4
5. A) A one year long Forward Contract on a non-dividend paying stock is entered into when the stock price is ₹ 40 and the RFR is 10% p.a.
a) What is the :
i) Forward price and
ii) Initial value of the Forward Contract ?
b) Six months later, the price of the stock is ₹ 45 and the RFR is still 10% p.a. What are the forward price at the end of the contract and the value of the Forward Contract in 6 months ? 5
- B) The current stock index is 3500 and the annualized dividend yield on the stocks is 6%. A six month futures is now currently trading at 4000. The risk free rate is 12%. Find if there is any scope for arbitrage opportunity if 25% of stock pays dividends. Assume the multiple associated with futures to be 100.
i) Assume that index closes at 4500
ii) Assume that index closes at 3000. 5
6. A) A stock price is currently Rs. 50. It is known that at the end of two months it will be either Rs. 53 or Rs. 48. The risk-free interest rate is 10% per annum with continuous compounding. What is the value of a two-month European call option under Binomial Option Pricing Model with a strike price of Rs. 49 ? Use no-arbitrage arguments. 5
- B) A stock price is currently Rs. 80. It is known that at the end of four months it will be either Rs. 75 or Rs. 85. the risk-free interest rate is 5% per annum with continuous compounding. What is the value of a four-month European put option with a strike price of Rs. 80 using Binomial Option Pricing Model ? Use no-arbitrage arguments. 5



7. A) A call has 91 days for its expiration. The risk-free interest rate is 8 per cent p.a. The strike price of the Call is Rs. 60. The price of the Stock is Rs. 65. The standard deviation of the stocks is 3 per cent p.a. Compute the value of the Call Option using Black-Scholes Valuation Model. 5
- B) The stock of X Ltd. is currently quoted in the market at Rs. 195. The company has declared a dividend of Rs. 8 per share recently which will be distributed to the shareholders after two months. The volatility of X's share price is 15 per cent annually. The risk-free interest rate prevailing in the economy is 6 per cent p.a. Using Black-Scholes Option Valuation Model; you are required to calculate the price of a 6-month Put Option on the company's stock at an exercise price of Rs. 225. 5
8. A) The price of a European call that expires in six months and has a strike price of Rs. 30 is Rs. 2. The underlying stock price is Rs. 29, and a dividend of Rs. 0.50 is expected in two months and again in five months. The term structure is flat, with all risk-free interest rates being 10%. What is the price of a European Put Option that expires in six months and has a strike price of Rs. 30 using Put-Call Parity ? 5
- B) A particular stock trades at Rs. 110 and there are two options which have the same time until expiration. Put one has an exercise price of Rs. 120 with a price of Rs. 11 and Put two has an exercise price of 115 with a price of Rs. 12. How can arbitrage profit be obtained so as to prove that the exercise price, more valuable the put ? 5
9. An Indian exporter to receive Euro 1,00,000 in 3 month's time. The Exchange rate prevailing is as follows :

Spot (Rs./Euro)	59.28/59.30
Forward (Rs./Euro)	59.43/59.45
3-month interest rates are as follows	
Euro	3.00 – 3.25
Rupee	9.25 – 9.50

What strategies can the Indian exporter adopt to hedge the exposure and which one do you suggest between Forwards and Money Market ? 10