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Roll No......................................

Department of Management

School of Management & Business Studies

Jamia Hamdard, New Delhi

MBA (General) - IV Semester Examination, April – May 2019

Financial Derivatives; MBA-GE-FM-07

Max Marks: 75 **Time Allowed: 3 Hours**

***Attempt any 5 questions, Scientific Calculators are allowed.**

Question1

(a) What are derivatives? Explain [5]

(b) What is OTC market? Why are forwards traded in OTC market? [5]

(c) What are Futures contracts? Explain [5]

Question2

(a) An investor has entered into a long forward. The forward has 0.25 years remaining until expiration. The continuously compounded risk free interest rate is 8%. The forward price is $1000. The underlying price is $950. What is the forward value? [5]

(b) How can you calculate Forward exchange rate for a currency? Explain [5]

(c) Suppose that the delivery date for forward delivery of € is 144 days hence. The annualised domestic (U.S.) interest rate is 7% if an individual wishes to borrow or lend for 144 days. The Euro interest rate is 4.5% per year. The spot exchange rate is $0.95/€. Determine the theoretical forward price of Euro. [5]

Question3

(a) With regard to futures, what do you understand by the term "Margin" .Explain[5]

(b) With regard to futures, what do you understand by the terms "basis" and "convergence". Explain. [5]

(c) What do you mean by the term "cross hedge" with regards to futures? Explain [5]

Question4

(a) What do you mean by "hedge ratio" with regard to futures? How is it calculated? Explain [5]

(b) A portfolio manager owns three stocks:

Stock	No of shares	Price	Beta
1	5,000,000	$8	1.2
2	5,000,000	$14	0.9
3	5,000,000	$10	1.1

Assume that the spot S&P 500 Index is at 1,350 & the S&P 500 futures price is 1357. How can this investor increase its beta to 1.66? [10]

Question5

(a) What are interest rate swaps? How do they work? Explain [5]

(b) Briefly discuss the three applications of currency swaps. [5]

(c) What is a fixed-floating currency swap? Explain [5]

Question 6

With the help of the information given below, calculate the price of plain vanilla fixed floating interest rate swap: [15]

- The spot term structure is: r (0, 1) = 5%; r (0, 2) = 6%; r (0, 3) = 7.5%
- The length of the swap is 3 years
- The floating rate is 1 year LIBOR
- Settlement payments are made yearly
- The notional principal of the swap is $100

Question 7

(a) Draw and explain the profit and loss diagrams for a call and put options. [5]

(b) What do you understand by the moneyness of an option? [5]

(c) What do understand by "Vega" and "Rho" of an option? [5]

Question 8

(a) An investor holds a long call that gives the right to purchase an underlying asset for $800 in one year. The current underlying asset price is $1000. The continuously compounded risk free interest rate is 5%. The underlying asset volatility is 25%. What is the option's value? {$N(d_1)=0.8883$;$N(d_2)=0.8334$} [5]

(b) Find the price of a European style put option using two period binomial option pricing model, with the help of information given below: [10]

S_0 = $25; K = $26; r=4%; σ = 6.9%; T = 1; n =2

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