M.Com. (Semester – IV) Examination, **April 2019**

COO 4A1: DERIVATIVES MARKET (OA -18) (NEW)

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 **supplied** on request.

1	Answer the following short questions:	**5 X 2 =10 Marks.**

    A. Write in brief about Forward Commission in India.   2

    B. What are the pay-off of Long and Short of Futures Contracts?   2

    C. What is Hedging? How do you compute Hedge Ratio?   2

    D. Discuss in brief about Put-Call Parity   2

    E. The Current price of Bharti's share is ₹800. An investor "A" is ready   2
to buy share at ₹900 for future delivery after 6-Months. A goes a
Long with the contract. After one month, another investor "B"
offers to buy the same share at ₹925 for delivery after 5 months. If
the risk free rate of interest is 9 per cent p.a., what is the value of the
Forward contract that investor A is holding?

2   Define the term "Financial Derivative". Discuss in brief the different types   10
of Financial Derivative.

3   What is Future Contract? Illustrate how do you price the Future Contracts   10
under the following Cases?
    i.   When the Underlying Asset carry no Income
    ii.   When Underlying asset carry Income and having Storage Cost.

4   Define the term "Options Contract". Discuss in brief any two Options   10
Strategies with the help of illustrations.

5   A refinery uses crude oil as a major input. The current price of crude oil is   10
$3,000 per barrel. Futures contracts on crude oil for 100 barrels each are
being traded at $3,100 per barrel with 3-Months to delivery. The cost of
capital for the refinery is 12%, while for storage of the oil; it incurs an
annual cost of 3%. Assume annual compounding for your analysis.
You are required to:

P-T-O

a. Do you find the Futures market and the Spot market prices to be consistent so as to offer no arbitrage possibility?
b. Is there any arbitrage opportunity? If yes, how can the arbitrage be executed?
c. Up to what price is this arbitrage feasible?

6   The price of the Suzlon share at the NSE is ₹85 while a 3-M Futures   10
Contract on Suzlon is being traded at ₹86. If one can borrow the funds at a Risk free interest of 12%, and Suzlong is not paying any Dividend in the next three months and assume the size of the Futures Contract to be 100 shares and interest is on compounding annual basis only.
You are required:
Is there any **arbitrage opportunity** available in the prices ruling in the Spot market and Futures market? If so, how can profit be made?

7   A stock price is currently ₹40. Over each of the next **two** three-month   10
periods it is expected to go up by 10% or down by 10%. The risk-free interest rate is 12% per annum with continuous compounding. What is the value of a six-month **European Put Option** with a strike price of ₹42 using **Binomial Option Pricing Model**?
(B)
A stock price is currently ₹50. Over each of the next two three-month periods it is expected to go up by 6% or down by 5%. The risk-free interest rate is 5% per annum with continuous compounding. What is the value of a six-month **European Call Option** with a strike price of ₹51 under **Binomial Option Pricing Model**?

8   The current price of a stock is ₹90 per share. The risk-free interest rate is   10
8% (annualized, continuous compounding). If the volatility of the stock is 23% p.a., what is the price of the ₹80 **Call Option** expiring in 6 months using **Black and Scholes Pricing**?

9   A stock is trading at ₹500. A Call option on the same with three months to   10
maturity and an exercise price of ₹550 is selling for ₹12. What should the price of a Put Option on the stock with three months to expiry and an exercise price of be ₹550 be, using **Put-Call parity**?

Assume that the Put Option is actually selling in the market for ₹45.00. How can you benefit from the situation if the following prices are prevailing in the market (a) ₹600 (b) ₹500 and (c) ₹400 and how much profits can you make under each situation?

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