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# IV Semester M.B.A. Degree Examination, October - 2021

## MANAGEMENT

## Derivatives and Risk Management

## (CBCS Scheme 2019-20)

## Paper : 4.2.3

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**Time : 3 Hours** **Maximum Marks : 70**

### SECTION - A

Answer any **FIVE** questions each carries **5** marks. **(5×5=25)**

1. Discuss the factors contribute for the growth of derivative market in India.
2. Write a short note on:
   a) Sensitivity Analysis.
   b) Scenario Analysis.
   c) Simulation Analysis.
3. From the following information prepare the margin account of the trader who had taken a long position, number of contract is equal to 1, number of units per contract is 50, price per unit on day one is Rs 700 Initial margin being 12% and maintenance margin is 75%.

| Day | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|
| Price | 693 | 682 | 663 | 648 | 623 | 610 | 633 | 638 | 621 |

4. Mr. Rohan decides to create a 'Bull Spead' by way of buying a August 2021 call option on stock, with an exercise price of Rs 100 for Rs 5 and selling a call option on it involving an exercise price of Rs 110 for Rs2 . Find out how much profit/loss he makes in each of the following conditions.
   a) On settlement day, the price of the underlying stock is Rs 95 per share.
   b) On settlement day, the price of the underlying stock is Rs106 per share.
   c) On settlement day, the price of the underlying stock is Rs113 per share.
5. Mention the deference between commodity futures and stock futures.
6. Consider a call option on a certain share, say ABC. Suppose the contract is made between 2 investors X and Y who take respectively the short ans long position. The other details are given below.
   Exercise price:Rs120
   Expiry month: March2021
   Size of the contract: 100 shares.
   Date of entering in to contract: JAN 5, 2021
   Price of share on date of contract: 24.50
   Price of call option on date of contract:Rs 10.00
   Calculate the profit/Loss profile for both the investor. Assume 8 days price expected of ABC Company is 90,100,110,120,130,140,150, and 160.

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7. Explain the SEBI Guidelines on derivatives market.

## SECTION - B

Answer any **THREE** question, each carries **10** marks. **(3×10=30)**

8. The current price of a share is Rs50 and it is believed that at end of one month the price will be either Rs55 or Rs45. What will a European call option with an exercise price Rs53 on this share be valued at, if the risk free rate of interest is 15% per annum? Also calculate the hedge ratio. applying binomial formulation.
9. Discuss the various factors affecting the option prices.
10. Assume that a market capitalization weighted index consist of 5 stocks. Currently the index stands @ 970. Obtain the price of a future contract with expiration in 115 days on this index having reference to the following additional information.
    a) Dividend of Rs6/share expected on share B,20 days from now.
    b) Dividend of Rs3/share expected on share E, 28 days from now.

    Ccrf is 8% Size of the contract is 300 units and other information's below

| Company | Share price | Market Cap(crore) |
|---|---|---|
| A | 22 | 110 |
| B | 85 | 170 |
| C | 54 | 216 |
| D | 25 | 200 |

11. Write a short note on i) Put Call parity theory, ii) Risk Neutralization Method, iii) Binomial Model

## SECTION - C

12. **Compulsory Question.** **(1×15=15)**

The following information is available:

* Current stock price: Rs. 225.
* Strike price: Rs. 245.
* The ccrf : 13% per annum.
* Volatility of interest rate: 4%.
* Duration of option: 5 months.

Using black Scholes model determine:

i) Value of call and put option.

ii) Option Delta, Gamma, Vega, Theta and Rho.