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Reg. No. | | | | | | | | |

IV Semester M.B.A (Day and Evening) Degree Examination, January - 2025

MANAGEMENT

Derivatives and Risk Management

(CBCS Scheme 2019 Onwards)

Paper : 4.2.3

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

SECTION - A

Answer any **Five** questions from the following. Each question carries **5** marks. **(5×5=25)**

1. Explain briefly the different types of risks a business enterprise that encounter.

2. Explain the concept of "Option Spreads" and describe the different types of option spread strategies.

3. Prepare margin account balance for the buyer ; An investor as agreed to buy an ABC Bank share of 1000 for Rs.200. The long position from the following information is given below:

   a) Value of Contract: Rs. 2,00,000

   b) Initial Margin : 10% of Contract.

   c) Maintenance Margin : 75% of Initial Margin.

   Prices are Rs.202,205,198,194,201 and 203.

4. You are given below information on options. State whether each one of these are In the Money (ITM), Out the Money (OTM) and AT the Money (ATM).

Sl.No.	Option	Strike Price	Stock Price
1	Call	55	58
2	Call	40	40
3	Put	100	112
4	Put	110	104
5	Put	150	120
6	Call	35	37
7	Put	8,550	8,560
8	Call	8,550	8,540

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5. A Stock is trading at Rs.600 today. What would be the fair value of future contract on the stock maturing after 90 days, if risk free rate of interest is 12% PACC, and after 45 days' stock is expected pay a dividend of Rs.30 per shares. What would be the fair value of the future contract?

6. An investor has sold put option for Rs.85 per share with a premium of Rs. 8/stock. Following are price are expected 60,70,80,90,100,110,115 and 120.

   a) Calculate net pay off.

   b) Perform same under call option position.

7. In January 2024 a six-month call on Good Ltd's stock with an exercise price of Rs.25 sold for Rs.2. The stock price was Rs.20. The risk-free interest rate was 5% PACC. How much would you be willing to pay for a Put Option on Good Ltd.'s stock with the same maturity and exercise price? What happens if the actual price is different from what you are willing to pay?

SECTION - B

Answer any **Three** questions from the following. Each question carries **10** marks. **(3×10=30)**

8. Considering the current scenario of the derivatives market in India, evaluate the impact of derivative trading on businesses. Discuss both the advantages and disadvantages with suitable examples.

9. Consider the following data about call option on ABC per contract involves 2000 shares.

Scenario	Strike Price(Rs.)	Premium(Rs.)
1	560	81.2
2	570	75
3	580	72

Help an investor to build a butterfly spread also calculate pay off if call price is 565,555, 572,585 and find out the following.

   a) Maximum Loss to the investor.

   b) Maximum Profit potential to the investor and BEPs.

10. A share is traded at Rs.320. Assuming that the end of 6 months the price will either be Rs.350 or Rs.310. Compute the premium on a European call option with an exercise price of Rs.300. The risk-free rate of interest with continuous compounding is 12% per annum. Also compute the hedge ratio.

11. On April 1st, 2024 investor's portfolio is as follows:

Security	Price	No.of Shares	β
ITC Ltd.	380	1500	0.9
HUL	670	1000	0.8
Infosys	2200	500	1.2
Reliance	900	750	1.1

The money can be borrowed at 10% p.a. compounded continuously. The investor fears a fall in the prices of the shares in the near future. Accordingly, he approaches you for an advice, you are required to:

a) Find out portfolio beta.

b) Find out fair value of Nifty futures expiring at the end of March.

c) If the investor wants to hedge 110% of his portfolio till end of April what he needs todo?

d) The investor wants to increase the beta to 1.4. How can he do it?

Presently Nifty is at 23580 and March Nifty futures are trading at 23595, April Nifty futures are trading at 23620.

SECTION - C

(1×15=15)

12. **Compulsory Case Study:**

The various measures of sensitivity obtained by differentiating the Black and Scholes formation for call and put options. From the information given below, you are required to obtain and interpret.

a) The call and put option values and

b) The values of Options Greeks.

The stock price being Rs. 306; exercise price is Rs.320; time to expiration is 60 days with a continuously compounded rate of return as 10% and the standard deviation on stock is 0.30.