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

IV Semester M.B.A. (Day and Evening) Degree Examination, December - 2023

MANAGEMENT

Derivatives and Risk Management

(CBCS 2019 Scheme)

Paper : 4.2.3

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

SECTION - A

Answer any Five of the following questions. Each question carries 5 marks.

(5×5=25)

1. Enlist the types of risks of a business enterprise with a suitable example.
2. Explain the elements of a derivative contract.
3. Distinguish between futures and options.
4. Prepare margin account balance for the buyer; an investor as agreed to buy an ABC share of 100 for Rs.1575 per share. You are given following information:

   a) Value of contract: Rs.1,57,500

   b) Initial margin equal to 10% of contract

   c) Maintenance margin 75% on initial margin

   Prices are Rs.1595, Rs.1610, Rs.1600, Rs.1575, Rs.1625 and Rs.1650

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5. On 1st Dec 2022, you have entered into futures contract for wheat and the contract size is 20 metric tons. Determine the value of futures contract if storage cost is Rs.250 per metric ton payable at the end of Jan 2023 and the end of April 2023. The contract expires in May 2023. The RFCC is 12%. The spot price of wheat as on 1st Dec 2022 is Rs. 21,000. Compute the futures of the wheat contract.
6. ABC debenture is now quoted in market for Rs.1000. The 10 months future contract is now available in market. The debenture pays interest every quarterly. The next interest on debenture is due at end of 2nd, 5th and 8th month of forward contract. The debenture is payable at Rs.45 per quarter.

   a) Determine the forward price of this contract if risk free is 12% cc.

   b) At end of 4 month. ABC debenture is quoted as Rs.1050 per debenture.

   c) Determine the value of Long and Short forward contract.

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7. From the following data, determine for each option, the intrinsic value and time value. State which of these in In The Money (ITM), Out of The Money (OTM) or At The Money (ATM).

Sl. No.	Option	Stock Price (Rs)	Exercise Price (Rs)	Option Price(Rs)
1	Call	46	48	4.30
2	Put	48	44	5.20
3	Call	28	26	1.50
4	Put	302	305	12.50
5	Put	56	54	4.80
6	Call	40	40	4

SECTION - B

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

8. Briefly explain the various strategies that an investor interested in options trading can use?

9. A spot for non-dividend paying security is Rs.100. The risk free is continuously compounded at 10%. Maturity period is 6 months.

   i) Find out arbitrage price.

   ii) If delivery price on this asset is Rs.105 and Rs.112 and work out arbitrage possibility.

   iii) At the end of one month if the spot price is Rs.106. Calculate long and short position.

10. Consider the following data regarding call option on the stock of XYZ Ltd. For which the contract involves 1000 shares.

	Strike Price (Rs.)	Premium (Rs.)
El	460	71
E2	470	65
E3	480	62

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Help the investor to build a butterfly spread. Also calculate the pay-off if the call price is Rs.458, Rs.465, Rs.472 and Rs.483.

11. The current stock price of XYZ is Rs.340, call option is available at Rs.370, the continues compounded interest rate is 12% and time to expire is 3 months. There is a chance of stock price moving up by 15% or moving down by 10%. Using Binomial Model.

   i) Calculate value of Call and Put Option.

   ii) Calculate Hedge Ratio and Interpret.

   iii) If Call Option is available at 9, how would you made arbitrage profit.

SECTION - C

12. Case Study (Compulsory) **(1×15=15)**

The current market price of SBIN is Rs.305/- Sri Druthi, an investor is interested in purchasing a Rs.400/- strike price call option with a time to expiry of 3 months. The standard deviation is 0.6 and risk free rate of interest is 10.00% PACC.

a) Sri Druthi seeks your help in computing the call premium according to the Black and Scholes Model.

b) What are Option Greeks? Compute the Option Greeks and explain the impact of each Greeks.

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