Mid-West University
Examinations Management Office
Surkhet, Nepal
Chance Examination-2078
Master of Business Studies (MBS)
Semester - IV

Subject: Derivatives and Risk Management | Course Code: FIN 547
Full Marks: 60 Pass Marks: 30 | Time: 3: 00 Hours

You are required to answer in your own words as far as applicable. Figures in the margins indicate full marks.

SECTION A: CRITICAL THINKING QUESTIONS (10 X 1 = 10 MARKS)

*Answer **ALL** questions:*

1. What is a derivative security?
2. Write the difference between an American option and a European option.
3. What do you mean by covered option?
4. Consider the following three call options:

Option	Strike Price (E)	Common stock price (Vs)	Option price (C)
1	60	50	2
2	50	50	6
3	40	50	15

   Indicate which option is in the money, at the money and out of the money.
5. What is implied volatility?
6. Given the following information regarding expiration cycles, prepare the expiration cycle of options written in January, February and December for March expiration cycle:
   a. January, April, July and October
   b. February, May, August and November
   c. March, June, September and December
7. Give the example of ITM call option.
8. What do you mean by calendar spread?
9. If strike prices are set in Rs. 50 increment for stock selling for less than Rs. 500, Rs. 80 increment for stock selling for in between Rs. 500 and Rs. 1,000 and Rs 100 increment for stock selling for more than Rs. 1,000. Calculate the possible strike price of the stocks:
   a. Stock selling for Rs. 250
   b. Stock selling for Rs 1,800
10. What do you mean by reversing trades in future contract?

SECTION B: SHORT ANSWER QUESTIONS (3 X 8 = 24 MARKS)

*Answer any **THREE** questions:*

11. Critique the following statement, made by an options investor: "My call option is de very deep in the money. I don't see how it can go any higher. I think i should exercise it." [8]

12. An investor, Eliza, recently observed the price of common stock of SC bank and found that the price had been hovering around Rs 37 per share for a long time, and she thought the stock was poised for a big move and continued in future. She sells a call option with an exercise price of Rs 40 expiring April 2020 for a premium of Rs 2 per share. In addition, she sells a put option with an exercise price of Rs 35 expiring April 2020 for a premium of Rs 3 per share.

a) What is the name of position Eliza has accumulated? [1]
b) What is the total receipt of Eliza's aggregate position? [1]
c) Construct a table showing Eliza's gain and losses from her put and call options at Rs 5 stock price intervals for SC bank prices from Rs 25 to Rs 55 inclusive. [3]
d) At what stock prices would Eliza be in break even on her combination? [1]
e) Construct a graph for the position accumulated by Eliza. [2]

13. What do you mean by derivative market? Explain the role of derivative market. [2+6]

14. Santu has an option to sell 100 shares of SCBL at Rs. 108 and her option expires on October 30, 2018. She paid option premium of Rs. 2 per share. Price of SCBL dropped to Rs 102 in August. Santu bought 100 shares for Rs 102 from the secondary market and sold them for Rs 108 to option writer.
    a. How much Santu earned by exercising right to sell 100 shares to option writer? [2]
    b. What is Santu's rate of return on investment? [2]
    c. Suppose price of the SCBL did not drop below Rs 108 during the option maturity period. Did Santu exercise options? Why? [2]
    d. If Santu did not exercise options and let it expires, what is limit of loss in Santu's investment? [2]
15. What is future contract? Differentiate between future contract and forward contract. [2+6]

SECTION C: LONG ANSWER QUESTIONS (2 X 13 = 26 MARKS)

*Answer any **TWO** questions:*

16. Consider the stock that is currently priced at Rs 200 per share and exercise price is Rs 200. Six month from now its price will be either Rs 250 or Rs 160. if the price rises to Rs 250, then six months later the price will be either Rs 312.50 or Rs 200. If, however, the price initially falls to Rs 160, then six months later the price will be either Rs 200 or Rs 128. The risk free rate is 7 percent per binomial period. Determine the value of the call option. [13]
17. What do you mean by stock price volatility? Describe the process of measuring stock price volatility. [4+9]
18. A call option enables the holder to acquire one share of stock at Rs. 45 a share for each option held. The option has 6 months until its expiration. The market price of the stock is currently Rs. 40 a share, and the expected standard deviation of its continuously compounded return over the near future is 0.30. The short term annual interest rate is 10 percent.
    a) On the basis of this information, what is the proper value of the option using the Black- Scholes option pricing model? [11]
    b) If the option is currently selling for Rs. 2.75, what would be your strategy? [2]

THE END