IV Semester M.B.A. Degree Examination, July 2018
(CBCS Scheme)
MANAGEMENT
4.2.3 : Risk Management & Derivatives

Time : 3 Hours   Max. Marks : 70

SECTION – A

Answer **any five** of the following questions. **Each** question carries **five** marks.

(5×5=25)

1. What is Decision making under Uncertainty ? What are the reasons for Uncertainty of project cash flows ?

2. Explain the advantages of using Future contracts in Hedging the risk of a Portfolio.

3. What are 'Commodity Derivatives' ? Write a brief note on Commodity Exchanges of India.

4. Nuksan Ltd. Which makes only one product, sells 20,000 units of its product making a loss of Rs. 20,000. The variable cost per unit of the product is Rs. 16 and the fixed cost is Rs. 60,000.

   The company has estimated its sales demand as under :

Sales (units)	20,000	24,000	28,000	32,000	36,000
Probability	0.10	0.15	0.20	0.30	0.25

   What is the probability that the company will continue to make losses ?

   What is the probability that the company will make a profit of at least Rs. 12,000 ?

5. A sold in January Nifty Futures contract for Rs. 21,50,000. For this he had paid an initial margin of Rs. 2,15,000 to his broker. Each Nifty Futures contract is for the delivery of 200 Nifties. On Settlement date, Nifty closed on 10850. How much profit/loss A has made ?

6. Consider a three month maturity forward contract on a non-dividend paying stock. The stock is available for Rs. 200 with Compounded Continuously Risk-free Rate of Interest (CCRRI) of 8% per annum. What would be the price of forward contract ?

7. Mr. MN purchased a 3-month call option for 100 shares in PQR Ltd., at a premium of Rs. 40 per share, with an exercise price of Rs. 560. He also purchased a 3-month put option for 100 shares of the same company at a premium of Rs. 10 per share with an exercise price of Rs. 460. The market price of the share on the date of Mr. MN's purchase of options is Rs. 500. Compute the profit or loss that Mr. MN would make assuming that the market price at the end of 3 months is

a) Rs. 360

b) Rs. 660

c) Rs. 500.

SECTION – B

Answer **any three** questions. **Each** question carries **ten** marks.　　　　(3×10=30)

8. What are 'Derivatives' ? State and explain in brief the different types of derivatives.

9. Briefly explain the techniques used in evaluating investment proposals under uncertainty in order to choose the best product.

10. KLM Ltd., is considering taking up one of the two projects – Project K and Project S. Both the projects having same life require equal investment of Rs. 80 lakhs each. Both are estimated to have almost the same yield. As the company is new to this type of business the cash flow arising from the projects cannot be estimated with certainty. An attempt was therefore, made to use probability to analyse the pattern of cash flow from other projects during the first year of operations. This pattern is likely to continue during the life of these projects. The results of the analysis are as follows :

Project K		Project S	
Cash flow (Rs.)	Probability	Cash flow (Rs.)	Probability
11	0.10	09	0.10
13	0.20	13	0.25
15	0.40	17	0.30
17	0.20	21	0.25
19	0.10	25	0.10

Required :

i) Calculate variance, standard deviation and co-efficient of variation for both the projects.

ii) Which of these two projects is more risky ?

11. The current market price of an equity share of Detergent Ltd. is Rs. 420. Within a period of 3 months the maximum and minimum price of it is expected to be Rs. 500 and Rs. 400 respectively. If the risk free rate of interest be 8% per annum, what should be the value of a '3 month Call Option' under the Risk Neutral Method at the strike rate of Rs. 450 ? Given $e^{0.02} = 1.0202$.

SECTION – C

This is a **compulsory** question carrying **fifteen** marks.   (1×15=15)

12. Case study :

A sports goods manufacturer, in conjunction with a software house, is considering the launch of a new sporting simulator based on videotapes linked to a personal computer enabling much greater realism to be achieved. Two proposals are being considered. Both use the same production facilities and, as these are limited, only the product can be launched.

The following data are the best estimates the firm has been able to obtain :

Particulars	Football Simulator	Cricket Simulator
Annual volume (Units)	40,000	30,000
Selling price	Rs. 130 p.u.	Rs. 200 p.u.
Variable production costs	Rs. 80 p.u.	Rs. 100 p.u.
Fixed production costs	Rs. 6,00,000	Rs. 6,00,000
Fixed selling and administrative costs	Rs. 4,50,000	Rs. 13,50,000

The higher selling and administrative costs for the cricket simulator reflect the additional advertising and promotion cost expected to be necessary to sell, the more expensive cricket system.

The firm has a minimum target of Rs. 2,00,000 profit per year for new products. The management recognizes the uncertainty in the above estimates and wishes to explore the sensitivity of the profit on each product to changes in the values of the variables (volume, price, variable cost per unit, fixed costs).

You are required :

a) To calculate the expected profit from each product.

b) To calculate the critical value for each variable (i. e. the value at which the firm will earn Rs. 2,00,000), assuming that all other variables are as expected (express this as an absolute value and as a percentage change from the expected value).