BA DEGREE (CBCS) EXAMINATION, OCTOBER 2019

Fifth Semester

Core Course - EC5CRT07 - QUANTITATIVE TECHNIQUES

B A Economics Model I,B A Economics Model II Foreign Trade,B A Economics Model II Insurance

2017 Admission Onwards

71939BFA

Maximum Marks: 80   Time : 3 Hours

Part A

Answer any ten questions

Each question carries 2 marks

1. Define Constants

2. Explain degree of Equations

3. Explain the concept of Net Present Value

4. Explain Natural Numbers

5. Find the higher order derivatives of

$$Y = 6x4 + 3x3 + 4x2 + x + 10$$

6. Find A U B when A = {2,3,4,5} and B = {3,5,7,9,11}

7. Define ordered pair

8. Give example of a row matrix of order 1*4 and column matrix of order 3*1

9. Define determinant. Is $\begin{vmatrix} 1 & 1 & 1 \\ 3 & 3 & 3 \end{vmatrix}$ a determinant. If yes, find the determinant. If no, why?

10. Define the subjective approach of probability

11. State the addition theorem of probability.

12. From a pack of 52 cards, two cards are drawn at random in succession without replacement. Find the probability that first card is a king and second card is a queen?

(10 × 2 = 20)

Part B

Answer any six questions

Each question carries 5 marks

13. Briefly explain the properties of Exponents

14. What is Geometric Progression ? Explain how the 15th term can be calculated.

15. Differentiate $y = x(1 + x2)$

16. Examine the following functions for its maxima or minima and determine its value $C = 2x^2 - 12x + 40$

17. If Qd = 140-4p. Draw a demand curve for the firm's demand function along with a demand schedule.

18. Show that $\begin{bmatrix} 3 & 4 \\ 2 & 3 \end{bmatrix} * \begin{bmatrix} 3 & -4 \\ -2 & 3 \end{bmatrix}$ gives a unit matrix

19. Define inverse of a matrix. Find the inverse of A= $\begin{bmatrix} 5 & 3 \\ 4 & 7 \end{bmatrix}$

20. Explain the term random experiments with suitable examples

21. State the properties of normal distribution

$(6 \times 5 = 30)$

Part C

Answer any two questions.

Each question carries 15 marks.

22. What is meant by differentiation. State the important rules of differentiation.

23. A radio manufacturer produces x sets per week at a total cost of Rs.$x^2 + 78x + 2500$. The demand function is 8x=600-p where p is the price per unit. When is the net revenue maximium. What is the price per set then?

24. Solve the system of equation : 12 x- 16 y+20z = -24 , 4x+4y-8z = -4 and 8x+12y +4z = 20

25. Five hundred families each having 4 children were taken as sample. If the probability of a child having boy is 0.5, in how many families would yoy expect to have (i) exactly one boy (ii) exactly two girls

$(2 \times 15 = 30)$