20100143

QP CODE: 20100143

Reg No : .....

Name : .....

BA DEGREE (CBCS) EXAMINATION, FEBRUARY 2020

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

72869850

Time: 3 Hours Maximum Marks :80

Part A

*Answer any **ten** questions.*

*Each question carries **2** marks.*

1. Define Variables
2. Define Simultaneous Equations
3. Define Geometric Progression
4. Distinguish between Prime numbers and Composite numbers
5. Find the higher order derivatives of

$$Y = 6x^4+3x^3-4x^2-x+10$$

6. If n(A) = 4. How many subsets will A contain
7. Define venn diagram
8. If A = {1,2} and B = {a, b} . Find A * B
9. Define determinant. Is $\begin{vmatrix} 2 & 3 & 1 \\ 4 & 3 & 2 \end{vmatrix}$ a determinant. If yes, find the determinant. If no, why?
10. Define the classical approach of probability
11. State the multiplication theorem of probability.
12. Define events.

(10×2=20)

Part B

*Answer any **six** questions.*

*Each question carries **5** marks.*

13. Distinguish between Natural and Common Logarithms.

14. Briefly explain the application of Progression in Economics

15. Differentiate $y=x(1+x^2)$

16. State the necessary and sufficient condition for maximum and minimum.

17. Explain the different type of economic functions

18. Explain different types of matrices

19. IF A= $\begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}$, B = $\begin{bmatrix} 1 & 0 \\ 2 & -3 \end{bmatrix}$ AND C = $\begin{bmatrix} 1 & -1 \\ 0 & 1 \end{bmatrix}$. FIND AB +AC

20. A basket contains 20 bad oranges and 80 good oranges. Three are drawn at random from this basket. Find the probability that of three (i) exactly two, (ii) at least one and (iii) utmost two are good oranges.

21. State the properties of normal distribution

(6×5=30)

Part C

*Answer any **two** questions.*

*Each question carries **15** marks.*

22. Find inverse of matrix given below if it exists:

a. $\begin{bmatrix} 0 & 2 & 4 \\ 2 & 4 & 6 \\ 6 & 2 & 2 \end{bmatrix}$

b. $\begin{bmatrix} 4 & 2 & 4 \\ 2 & 0 & 2 \\ 8 & 2 & 8 \end{bmatrix}$

c. $\begin{bmatrix} 2 & 2 & 2 \\ 4 & 4 & 6 \\ 2 & 8 & 18 \end{bmatrix}$

23. The demand function of a monopolist is p=15-2x and the cost function is $c=x^2+2x$ find the
    1. marginal cost
    2. marginal revenue
    3. equlibrium output
    4. average cost
    5.average cost when output is 4 units

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

25. Mean salary of workers in a factory is Rs.5400 with a SD of Rs.480. If a workers is selected at randoam find the probability that his salary is (i) less that Rs.4800, (b) between Rs.5000 and Rs.6000, (iii) exactly equal to Rs.5100 (iv) greater than Rs.5600

(2×15=30)