QP CODE: 21101692

21101692

Reg No : .....

Name : .....

B.A DEGREE (CBCS)SPECIAL SUPPLEMENTARY REGULAR / PRIVATE EXAMINATION, JULY 2021

Fifth Semester

CORE COURSE - EC5CRT07 - QUANTITATIVE TECHNIQUES

Common for B.A Economics Model I, B.A Economics Model II Foreign Trade & B.A Economics Model II Insurance

For Regular Candidates 2018 Admission Only,

For Private Candidates 2017 & 2018 Admissions Only

5370EBB6

Time: 3 Hours Max. Marks : 80

Instructions to Private candidates only: *This question paper contains* ***two sections****. Answer* ***SECTION I*** *questions in the answer-book provided.* ***SECTION II****, Internal examination questions must be answered in the question paper itself. Follow the detailed instructions given under* ***SECTION II***

SECTION I

Part A

Answer any ***ten*** *questions.*

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

1. Define Variables
2. Define Equations
3. Distinguish between finite and infinite sequences
4. What are Irrational Numbers?
5. Find the higher order derivatives of

   $Y = 6x^4+3x^3-4x^2-x+10$
6. Define Finite and Infinite set
7. What is a cartesian product
8. Define determinant. Is $\begin{vmatrix} 2 & 3 & 1 \\ 4 & 3 & 2 \end{vmatrix}$ a determinant. If yes, find the determinant. If no, why?
9. If A= $\begin{bmatrix} 3 & 4 & 7 \\ -2 & 5 & 6 \\ 7 & 3 & -9 \end{bmatrix}$. Find Cofactors of elements 6 and -9
10. Define the subjective approach of probability
11. State the multiplication theorem of probability.

12. Find the probability Z lies between 0 and -1.5

(10×2=20)

Part B

*Answer any **six** questions.*

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

13. Find the 15^{th} term and the sum of first 20 terms in the AP 2,6,10,…..

14. What is the principal invested at 10% for 6 months will yield a simple interest of Rs. 150 ?

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

16. Determine the maximum and minimum values of the function $f(X) = x^3-6x^2+9x-5$

17. If $C = 4X^2 +2X +20$. Draw Total Cost, Fixed cost and Variable cost

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

19. Find AB if A= $\begin{bmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \end{bmatrix}$ and B = $\begin{bmatrix} -7 & -8 \\ 9 & 10 \\ 0 & -11 \end{bmatrix}$

20. With suitable illustration explain the terms (a) random experiments (b) sample space and (c) events

21. A bag contains 7 white balls, 5 black balls and 4 red balls. If two balls are drawn at random from the bag find the probability that (i) both the balls are white, (ii) one is black and other is red, (iii) none of them is red.

(6×5=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. 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. Solve the system of equation : 12 x- 16 y+20z = -24 , 4x+4y-8z = -4 and 8x+12y +4z = 20

25. Explain the properties of a normal curve.

(2×15=30)