QP CODE: 22100143

Reg No : .....

Name : .....

B.A DEGREE (CBCS) REGULAR / REAPPEARANCE EXAMINATIONS, JANUARY 2022

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 : 2017 Admission Onwards

For Private Candidates : 2019 Admission Only

F94B0B94

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 Sequences.
2. Define compound interest.
3. What do you mean by depreciation of assets?
4. Explain Rational Numbers.
5. Find the derivative of $y = x^2e^x$
6. Find the second order derivative of the following function $Y = (2x+1)(3x^2-1)$
7. What are the conditions for minimum?
8. Explain venn diagram.
9. What is one to one relation?
10. Find A- B if A= $\begin{bmatrix} 1 & 2 & -3 \\ 5 & -8 & -9 \\ 1 & 0 & 6 \end{bmatrix}$ and B = $\begin{bmatrix} -5 & 3 & -3 \\ 5 & 10 & 5 \\ -3 & -3 & 8 \end{bmatrix}$
11. Define combinations.

12. If 3 cards are drawn from the pack of 52, what is the probability that all the three will be queens?

(10×2=20)

Part B

*Answer any **six** questions.*

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

13. Distinguish between variables and constants with examples.

14. Simplify 1. $(a^2)^2 x\ a^3$ 2. $a^{-3} \times a^0 \times a^3$

15. What are derivatives?

16. If A = {1,3,5,7} and B = {2,4,6,8} C = {7,8,9,10}. Find 1. A U (B ∩ C)
2. A∩ (B UC)

17. Define functions. Explain the different types of functions.

18. Distinguish between linear and quadratic equation.

19. Explain the different approaches of Probability.

20. Explain the addition and multiplication theorem of probability.

21. In a binomial distribution values of n and p are given as 100 and 2/5 respectively. Find the mean and SD of the distribution.

(6×5=30)

Part C

*Answer any **two** questions.*

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

22. Solve the following equations i) $6x^2-30x=0$ ii) $6x^2-8x-30=0$ ii) $4x^2+5x-51=0$.

23. The cost for a monopolistic firm producing x radios per week is given to be $4x^2-80x+500$ rupees. To have minimum cost, how many units should be produced per week?

24. Solve using Cramer's rule:
1. x- y = 1, x +z = -6 , x+y-2z = 3
2. 3x-5z = -1 , 2x +7y = 6, x+y+z = 5
3. 2x-y + 1, 7x- 2y = -7

25. State binomial frequency distribution. What are its assumption and properties?

(2×15=30)