

QP CODE: 24035039



Reg No

Name

**B.A DEGREE (CBCS) REGULAR / REAPPEARANCE EXAMINATIONS, OCTOBER
2024**

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

2017 Admission Onwards

CB76E867

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

Part A

*Answer any **ten** questions.*

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

1. Define parameters.
2. Briefly explain the properties of Exponents.
3. Define simple interest.
4. What are Irrational Numbers?
5. What are derivatives?
6. Find the higher order derivatives of
$$Y = 6x^4 + 3x^3 - 4x^2 - x + 10$$
7. What are the conditions for minimum?
8. State the difference between equal set and equivalent set.
9. Define ordered pair.
10. Define determinant. Is $\begin{vmatrix} 2 & 3 & 1 \\ 4 & 3 & 2 \end{vmatrix}$ a determinant. If yes, find the determinant. If no, why?
11. Define the subjective approach of probability.
12. Define sample space.



(10×2=20)

Part B

Answer any **six** questions.

Each question carries **5** marks.

13. Explain General term in Geometric Progression. Find the 10th term of the sequence 3, 6, 12,....
14. The present value of a machine is Rs. 80000. It is know that the value of the machine depreciates 10% annually. Find its value 3 years ago.
15. Differentiate y with respect to x ,if $y = (x+1)/(x-1)$.
16. Explain venn diagram.
17. If $Q_d = 140 - 4p$. Draw a demand curve for the firm's demand function along with a demand schedule.
18. 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 $AB + AC$.
19. Explain the application of probability in economics.
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 binomial distribution.

(6×5=30)

Part C

Answer any **two** questions.

Each question carries **15** marks.

22. Solve the following equations a. $x^2 + 4x - 21 = 0$ b. $2x^2 + 3x - 27 = 0$ c. $x^2 - 9x + 8 = 0$.
23. Give an account of the applications of derivatives in economics.
24. Solve following Equations using matrices a. inverse method b . Cramer's rule $x+y+z = 7$, $x+2y+3z = 16$, $x+3y+4z = 22$.
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)