

QP CODE: 22103496



Reg No :

Name :

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

2017 Admission Onwards

05831CF7

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. Distinguish between finite and infinite sequences.
3. Explain the concept of Net Present Value.
4. Explain Integers.
5. What are derivatives?
6. Differentiate (a) $y = \sqrt{x}$ (b) $y = (1/x)$
7. What are the conditions for maximum.
8. Find $A \cup B$ when $A = \{0, 1, 2\}$ and $B = \{a, x, y\}$
9. Define quadratic equation.
10. let $Z = \begin{pmatrix} 1 & 2 & -1 \\ 3 & 2 & -1 \\ 0 & 0 & 1 \end{pmatrix}$. Write the order of the matrix and find Z_{13} and Z_{32}
11. A coin is tossed five times. What is the probability of getting heads in all the trials?
12. Define binomial frequency distribution.

(10×2=20)





Part B

Answer any **six** questions.

Each question carries **5** marks.

13. Briefly explain the properties of exponents.
14. Find the sum of first 15 terms of the GP : 32, 16, 8, 4,
15. The total revenue function of a firm selling a single commodity x is given as $R = 80x - 4x^2$
find MR at $x=8$
16. Explain venn diagram.
17. From the Indifference schedule for pen and paper given below. Draw Indifference curve:
pen (units) : 1,2,3,4

paper (units) : 30,20,12,10
18. Explain different types of matrices.
19. Explain the different approaches of Probability.
20. Explain the addition and multiplication theorem of probability.
21. Explain conditional probability. How is it calculated?

(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. A company has examined the cost structure and has determined that C the total cost, R the total revenue, X the number of units produced are related as $C = 100 + 0.015X^2$ and $R = 3x$. Find the production rate X that will maximise the profit of the company, Find that profit.
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 worker is selected at random find the probability that his salary is (i) less than Rs.4800,
(ii) between Rs.5000 and Rs.6000, (iii) exactly equal to Rs.5100
(iv) greater than Rs.5600

(2×15=30)

