



K24U 1652

Reg. No. : .....

Name : .....

Second Semester B.A. Degree (CBCSS – OBE – Regular/Supplementary/  
Improvement) Examination, April 2024

(2019 Admission Onwards)

COMPLEMENTARY ELECTIVE COURSE IN ECONOMICS/DEVELOPMENT  
ECONOMICS

2C02ECO/DEVECO : Mathematics for Economic Analysis – II

Time : 3 Hours

Max. Marks : 40

PART – A

Answer **all** the **6** questions. **Each** carries **1** mark.

1. Define characteristic roots.
2. Define the inverse of a matrix.
3. Explain the properties of a transpose of a matrix.
4. Explain the scalar multiplication of a matrix.
5. Solve  $\int (x + 1/x) dx$ .
6. If  $A = \begin{bmatrix} 2 & 1 \\ 0 & -3 \end{bmatrix}$  find  $A^2$ .

(6×1=6)

PART – B

Answer **any 6** questions. **Each** carries **2** marks.

7. Distinguish between upper triangular and lower triangular matrix.
8. Marginal cost is given as  $4q$ . Find total revenue when  $q = 6$ .

9. If  $A = \begin{bmatrix} 1 & 2 & 3 \\ 2 & 3 & 2 \\ 3 & 3 & 4 \end{bmatrix}$  find Adj A.

P.T.O.



10. Explain the relationship between Average Cost (AC) and Marginal Cost (MC).
11. A demand function of an item is  $P = 8/(x + 1) - 2$  and supply function is  $P = (x + 3)/2$ . Determine the equilibrium price.
12. Integrate  $\int kx^n dx$ .
13. Evaluate  $\int_1^3 (6x^2 + 5) dx$ .
14. What do you mean by Integration by substitution ? (6×2=12)

PART – C

Answer **any 4** questions. **Each** carries **3** marks.

15. Find the rank of matrix  $\begin{bmatrix} 1 & 4 & 0 \\ 2 & 5 & 0 \\ 3 & 6 & 0 \end{bmatrix}$ .
16. How to find the area under a curve using integration ?
17. Define Lagrange multiplier and its significance.
18. Distinguish between consumer surplus and producer surplus.
19. If  $MR = 285 - 0.5x - 0.15x^2$ , find TR and AR functions.
20. Describe the properties of definite integrals. (4×3=12)

PART – D

Answer **any 2** questions. **Each** carries **5** marks.

21. The demand function for a particular brand of calculator is  $p = 75 - 0.3q - 0.05q^2$ . Find the consumer surplus at a quantity of 15 calculators.
22. Explain the meaning of integration and its basic rules.
23. Explain the properties of Determinants.
24. If  $A = \begin{bmatrix} 1 & 2 & 5 \\ 2 & 3 & 1 \\ 1 & 1 & 1 \end{bmatrix}$ , find  $A^{-1}$ . (2×5=10)
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