



K17U 0989

Reg. No. :

Name :

II Semester B.A. Degree (C.B.C.S.S. – Reg./Supple./Imp.)
Examination, May 2017
COMPLEMENTARY COURSE IN ECONOMICS
2C02 ECO : Mathematics for Economic Analysis – II
(2014 Admn. Onwards)

Time : 3 Hours

Max. Marks : 40

PART – A

Answer **all** the 4 questions. **Each** carries 1 mark.

1. A matrix in which every element is zero, is said to be
2. The general value and particular value of integral differ only by

3. Rank of the matrix $\begin{vmatrix} 2 & 1 \\ 1 & 3 \end{vmatrix}$ is

4. _____ of the determinant is the number of rows or columns of the determinant.

(1×4=4)

PART – B

Answer **any** 7 questions. **Each** carries 2 marks.

5. What is Consumer Surplus ?
6. What is minor of an element of a matrix ?

7. Show that $\begin{vmatrix} 4 & 6 \\ 2 & 3 \end{vmatrix}$ is singular.

P.T.O.



8. $\int \frac{\sqrt{x+1}}{\sqrt{x}} dx$?

9. Explain the concepts of marginal revenue, marginal cost, total revenue and total cost.

10. What is Eigen value ?

11. Are the following two determinants equal, why ?

$$\begin{vmatrix} 2 & 3 & 1 \\ 1 & 0 & 2 \\ 4 & 2 & 3 \end{vmatrix} \text{ and } \begin{vmatrix} 3 & 2 & 1 \\ 0 & 1 & 2 \\ 2 & 4 & 3 \end{vmatrix}$$

12. Given $A = \begin{vmatrix} 1 & 4 & 2 \\ 2 & 1 & -1 \\ 1 & 2 & 1 \end{vmatrix}$ $B = \begin{vmatrix} 2 & 3 & 1 \\ 1 & 0 & 2 \\ 4 & 2 & 3 \end{vmatrix}$ $C = \begin{vmatrix} 1 & 3 & 1 \\ 1 & 0 & 1 \\ 1 & 2 & 3 \end{vmatrix}$. Determine $2(6A - 2B - 2C)$.

13. Explain with an example equality of matrices.

14. What are rules of integration ?

(2×7=14)

PART - C

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

15. Explain constraint optimization.

16. Explain substitution method of integration with an example.

17. Find the Rank of a matrix $\begin{vmatrix} 1 & 2 & 3 \\ 3 & 6 & 9 \\ 2 & 4 & 6 \end{vmatrix}$.



18. Find producer's surplus when the supply function is given by $p = 10 + 2q$ and the equilibrium price for the product is Rs. 20 ?

19. Find $\int_1^2 x\sqrt{1+x^2}dx$.

20. Explain the methods of integration.

(3×4=12)

PART – D

Answer any 2 questions. Each carries 5 marks.

21. Apply Cramer's Rule to find solution for the equations.

$$3x + y + z = 8; \quad x + y + z = 6; \quad 2x + y - z = 1$$

22. Explain the properties of definite integrals.

23. Explain the properties of a determinant with suitable examples.

24. Explain different operations of matrices.

(5×2=10)

3. Rank of the matrix $\begin{vmatrix} 2 & -1 \\ 1 & 3 \end{vmatrix}$ is _____

4. _____ of the determinant is the number of rows or columns of the determinant. (1×4=4)

PART – B

Answer any 7 questions. Each carries 2 marks.

5. What is Consumer Surplus ?

6. What is minor of an element of a matrix ?

7. Show that $\begin{vmatrix} 1 & 8 \\ 2 & 9 \end{vmatrix}$ is singular.