

Reg. No. :

Name :

II Semester B.A. Degree (C.B.C.S.S. – Reg./Supple./Imp.)
Examination, May 2018
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. $\int x^n dx =$ _____
2. Every element of a determinant has a _____
3. _____ of a matrix is the sum of the elements of the leading diagonals.
4. _____ is reverse process of differentiation. (1×4=4)

PART – B(Answer **any** 7 questions. **Each** carries 2 marks.)

5. Find x and y; if $[4 \ 5] + [x \ y] = [7 \ 3]$.
6. If the marginal revenue function for output 'q' is given by $MR = \frac{6}{(q+2)^2} - 5$.
Find the demand function.
7. Explain co-factor of a determinant with an example.
8. What are the rules of integration ?



9. Are the following two determinants equal ?

$$\begin{vmatrix} 2 & 4 & 5 \\ 1 & 2 & 3 \\ 0 & 1 & 4 \end{vmatrix} \text{ and } \begin{vmatrix} 4 & 2 & 5 \\ 2 & 1 & 3 \\ 1 & 0 & 4 \end{vmatrix}$$

10. Define Eigen value.

11. Integrate $\log x$.

12. Find the rank of $\begin{bmatrix} 5 & 2 & 1 \\ 0 & 1 & 3 \\ 2 & 1 & 0 \end{bmatrix}$.

13. Explain consumer surplus.

14. Explain the properties of definite integrals.

(2×7=14)

PART - C

(Answer any 4 questions. Each carries 3 marks.)

15. Find the product of $A = \begin{bmatrix} 1 & 2 & 3 \\ 3 & 1 & 2 \\ -1 & 1 & 1 \end{bmatrix}$ and $B = \begin{bmatrix} 1 & 1 & 4 \\ -2 & 3 & 2 \\ 3 & 1 & 1 \end{bmatrix}$.

16. Explain constraint optimization.

17. Integrate $(x + 1)^5$.

18. Evaluate $\begin{vmatrix} a^2 & a & 1 \\ b^2 & b & 1 \\ c^2 & c & 1 \end{vmatrix}$.

19. Explain the methods of integration.

20. Explain five properties of a determinant.

(3×4=12)



PART - D

(Answer any 2 questions. Each carries 5 marks.)

21. The demand function is $D = 250 - 50p$ and supply function is $S = 25p + 25$, calculate equilibrium price. Find consumer's and producer's surplus.

22. Solve the simultaneous equation using Cramer's rule :
 $2x - 3y + 5z = 11, 5x + 2y - 7z = -12, -4x + 3y + z = 5.$

23. Find the adjoint of the matrix $\begin{bmatrix} 1 & 1 & 1 \\ 1 & 2 & -3 \\ 2 & -1 & 3 \end{bmatrix}$ and verify the theorem

$$A(\text{Adj } A) = (\text{Adj } A)A = |A| I.$$

24. Integrate $\frac{x}{(x-1)(2x+1)}$. (5x2=10)