



K23P 3013

Reg. No. : .....

Name : .....

I Semester M.A. Degree (CBCSS – OBE – Regular)  
Examination, October 2023  
(2023 Admission)

ECONOMICS/APPLIED ECONOMICS/DEV. ECONOMICS  
MAACO01C03/MADCO01C03/MAECO01C03 : Quantitative Techniques For  
Economic Analysis – I

Time : 3 Hours

Max. Marks : 60

Short answer questions. (5 out of 6)

(3×5=15)

1. Find the determinant of the matrix  $A = \begin{bmatrix} 2 & -1 \\ 4 & 2 \end{bmatrix}$ .
2. Find the number of different arrangements or permutations consisting of 3 letters each that can be formed from the 7 letters A, B, C, D, E, F, G.
3. Evaluate  ${}^7C_4$ .
4. State Pareto distribution.
5. Define unbiased and efficient estimates.
6. State the scope of statistical inference.

Short essay questions. (3 out of 5)

(6×3=18)

7. Explain the properties of random sampling.
8. Solve the system equation for x and y by using Cramer's rule.

$$4x + y = 11$$

$$3x + 5y = 21$$

9. Find the characteristic equation and characteristic roots of the matrix  $A = \begin{bmatrix} 2 & 3 \\ 3 & 2 \end{bmatrix}$ .

P.T.O.



10. The following data show the number of seeds germinating out of 10 on damp filter for 80 set of seeds. Fit a binomial distribution to this data.

x	0	1	2	3	4	5	6	7	8	9	10
y	6	20	28	12	8	6	0	0	0	0	0

11. "The input-output system is derived from the assumption about economic behaviour and definitions the variable used in the analysis". Explain.

Essay questions. (3 out of 5)

(3×9=27)

12. Define the method of moments and maximum likelihood. Explain its merits and demerits.
13. Two samples are drawn from two normal populations. From the following data test whether the two samples have the same variance at 5% level using F-test.

Sample : 1	60	65	71	74	76	82	85	87		
Sample : 2	61	66	67	85	78	63	85	86	88	91

14. Enumerate the criteria for evaluating a hypothesis and role of a hypothesis.
15. Explain the relevance of random sampling in statistical inference.
16. In an anti-malarial campaign in a certain area, quinine was administered to 812 persons out of a total population of 3248. The number of fever cases is shown below :

Treatment	Fever	No Fever	Total
Quinine	20	792	812
No quinine	220	2216	2436
Total	240	3008	3248

Illustrate using the application of chi-square test.