

K25P 3461



Reg. No. :

Name :

I Semester M.A. Degree (C.B.C.S.S. – OBE – Reg./Supple./Imp.)
Examination, October 2025
(2023 Admission Onwards)
ECONOMICS/APPLIED ECONOMICS/DEV. ECONOMICS
MAACO01C03/MADCO01C03/MAECO01C03 : Quantitative Techniques for
Economic Analysis – I

Time : 3 Hours

Max. Marks : 60

(5×3=15)

I. Answer **any five** of the following questions.

- 1) Describe inverse of a matrix.
- 2) Define eigen values.
- 3) Compare permutation and combination.
- 4) What is expectation ?
- 5) Describe the law of large numbers.
- 6) What is critical region ?

(3×6=18)

II. Answer **any three** of the following questions.

- 7) Compare the student's t and F distributions in terms of their properties, shapes and uses.
- 8) A box contains 6 tickets. Two tickets carry a price of Rs. 5 each and the other four prizes of Re. 1.
 - a) if one ticket is drawn, what is the expected value of the prize ?
 - b) If two tickets are drawn, what is the expected value of the prize ?
- 9) Explain central limit theorem.
- 10) Solve using Cramer's rule
$$\begin{aligned} 2x + 3y &= 1 \\ 3x + y &= 5. \end{aligned}$$
- 11) Compare point and interval estimation.

P.T.O.



III. Answer **any three** of the following questions.

(3×9=27)

- 12) Suppose an economy consists of two industries-steel and automobiles. In order to produce automobiles, the economy requires steel and automobiles. Similarly, in order to produce steel, the economy requires automobiles and steel. To produce one-rupee worth of steel, the steel industry requires 0.2 paisa worth of steel and 0.7 paisa worth of automobiles. To produce one-rupee worth of automobile, the automobile industry requires 0.5 paisa worth of steel and 0.1 paisa worth of automobiles. Also suppose that the economy has to export Rs. 15,000 worth of steel and Rs. 5,000 worth of automobiles.
- Express the above problem as an input-output model.
 - How much of worth of steel and automobiles should be produced to meet the total demand ?
- 13) A basket contains 20 bad oranges and 80 good oranges. Three oranges are drawn at random from this basket. Find the probability that,
- exactly 2 are good oranges
 - at least 2 are good oranges and
 - utmost 2 are good oranges.
- 14) Examine the process of testing of hypothesis. Examine the role of hypothesis testing in economics.
- 15) Describe statistical inference. Explain various methods of statistical inference.
- 16) In the population, the average IQ is 100 with a standard deviation of 15. A team of scientists want to test a new medication to see if it has either a positive or negative effect on intelligence, or not effect at all. A sample of 30 participants who have taken the medication has a mean of 140. Did the medication affect intelligence ?
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