K24P 3813

Reg. No. : .....

Name : .....

I Semester M.A. Degree (C.B.C.S.S. – O.B.E. – Reg./Supple./Imp.) Examination, October 2024
(2023 Admission Onwards)
ECONOMICS/APPLIED ECONOMICS/DEV. ECONOMICS
MAACO01C03/MADCO01C03/MAECO01C03 : Quantitative Techniques for Economic Analysis – I

Time : 3 Hours Max. Marks : 60

Short answer question. (**5** out of 6) : **(5×3=15)**

1. Define determinant.
2. State Hawkins-Simon condition.
3. Compare permutation and combination.
4. What is expectation ?
5. What are sampling errors ?
6. Define confidence interval.

Short Essay question. (**3** out of 5) : **(3×6=18)**

7. The following inter-industry transaction table was constructed for an economy. Construct technology coefficient matrix.

Industry	1	2	Final consumption	Total output
1	500	1600	400	2500
2	1750	1600	4650	8000
Labours	250	4800		

8. Solve using Cramer's rule :
   $2x - 3y = 3$
   $4x - y = 11$
9. Write a note on Baye's theorem.
10. Compare point and interval estimation.
11. Define hypothesis testing. Examine the procedure for testing a hypothesis.

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Essay Question. (**3** out of 5) : **(3×9=27)**

12. Show that the following matrix satisfies Cayley-Hamilton theorem.

$$A = \begin{bmatrix} 1 & 1 & 2 \\ 3 & 1 & 1 \\ 2 & 3 & 1 \end{bmatrix}$$

13. It is found that the number of accidents occurring in a factory follows Poisson distribution with a mean of 2 accidents per week. Find the probability that
    i) No accidents occurs in a week and
    ii) Number of accidents in a week exceeds 2. (Given $e^{-2} = 0.135$).
14. Two random samples were drawn from two normal population and their values are

A :	66	67	75	76	82	84	88	90	92		
B :	64	66	74	78	82	85	87	92	93	95	97

    Test whether the two populations have the same variance at 5% level of significance.
    (F = 3.00 at 5% level for $V_1 = 8$ and $V_2 = 10$)
15. What is estimation ? Explain the properties of an efficient estimator.
16. What are sampling distributions ? Examine various sampling distributions with its properties.