



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.

P.T.O.



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.
-