

D 31883

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Name.....

Reg. No.....

**THIRD SEMESTER (CBCSS—UG) DEGREE EXAMINATION
NOVEMBER 2022**

Economics

ECO 3B 03—QUANTITATIVE METHODS FOR ECONOMIC ANALYSIS—I

(2019 Admission onwards)

Time : Two Hours and a Half

Maximum : 80 Marks

Section A (Short Answer Questions)

*Maximum marks in this section is 25.
Students can attempt **all** questions.
Each question carries a maximum of 2 marks.*

1. Find the range of the set 6, 8, 12, 18, 15, 9, 11, 15.
2. What is Spearman's Rank correlation ?
3. Explain the concept of Adjoint of a matrix.
4. Define Variables and Constants.
5. Find the number of digits in 2^{35} .
6. What are the important properties of Matrix multiplication ?
7. The grades of a student in six examinations were 84, 91, 72, 68, 87 and 78. Find the Arithmetic mean of the grades.
8. What is Rectangular hyperbola ?
9. What is a Determinant ?
10. Point out the merits and demerits of Mode.
11. Write a short on Graphical Presentation of Data.
12. What is scatter diagram ?
13. Explain the concept of Identity matrix.

Turn over

14. Find $A + B$ for $A = \begin{bmatrix} 2 & 1 \\ 2 & 4 \end{bmatrix}$ and $B = \begin{bmatrix} 2 & 1 \\ 2 & 4 \end{bmatrix}$.

15. Define : (i) Skewness ; and (ii) Kurtosis.

Section B (Short Essay Questions)

Maximum marks in this section is 35.

*Students can attempt **all** questions.*

Each question carries a maximum of 5 marks.

16. Briefly explain different types of correlation.

17. Find (i) $(5a^2b) \times 7a^3b^4$; and (ii) $36x^7y^4 \div 4x^6y$.

18. Write a short note on Measures of Dispersion.

19. What is meant by Inverse of the Matrix and point out important properties of an Inverse of a matrix ?

20. Evaluate the following determinants :

(a) $\begin{vmatrix} 4 & 0 & 2 \\ 6 & 0 & 3 \\ 8 & 2 & 3 \end{vmatrix}$.

(b) $\begin{vmatrix} 8 & 1 & 3 \\ 4 & 0 & 1 \\ 6 & 0 & 3 \end{vmatrix}$.

21. Calculate Correlation Co-efficient between X and Y for the following data :

X :	1	2	3	4	5	6	7	8	9
Y :	9	8	10	12	11	13	14	16	15

22. Calculate the Median from the following data :

Weight In gms.	410 – 419	420 – 429	430 – 439	440 – 449	450 – 459	460 – 469	470 – 479
No.of Apples	14	20	42	54	45	18	7

23. Distinguish between Correlation analysis and Regression analysis.

Section C (Long Essay Questions)

*Answer any two questions.
Each question carries a maximum of 10 marks.*

24. Define Linear Regression ? Briefly explain the estimation procedure of Principle of Ordinary Least Squares.
25. The scores of two batsman A and B in ten innings during a certain season are :
- | | | | | | | | | | | |
|---|---|----|----|----|----|----|----|----|----|----|
| A | : | 28 | 47 | 63 | 71 | 39 | 10 | 60 | 96 | 14 |
| B | : | 31 | 48 | 53 | 67 | 90 | 10 | 62 | 40 | 80 |
- Find (using Co-efficient of Variation) which of the two batsmen A or B is more consistent in scoring.
26. Explain different types of functions and its applications in Economic analysis.
27. (i) Find the Inverse of a matrix :

$$\begin{bmatrix} 1 & 2 & 3 \\ 1 & 3 & 5 \\ 1 & 5 & 12 \end{bmatrix}$$

- (ii) Solve using Crammer's rule :

$$5x + y = 2$$

$$2x - 3y = 23$$

(2 × 10 = 20 marks)