

22U314

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Name: .....

Reg.No: .....

**THIRD SEMESTER B.A. DEGREE EXAMINATION, NOVEMBER 2023**

(CBCSS - UG)

(Regular/Supplementary/Improvement)

**CC19U ECO3 B03 - QUANTITATIVE METHODS FOR ECONOMIC ANALYSIS - I**

(Economics - Core Course)

(2019 Admission onwards)

Time : 2.5 Hours

Maximum : 80 Marks

Credit : 4

**Part A** (Short answer questions)

Answer *all* questions. Each question carries 2 marks.

1. If  $x^y = y^x$  and  $x = 2y$ , show that  $y = 2$ .
2. Give an identity equation.
3. Define monotonically decreasing function.
4. Give the equation of the line parallel to Y axis.
5. Define row matrix.
6. Find the value of the determinant  $\begin{vmatrix} 2 & 4 \\ 8 & 2 \end{vmatrix}$
7. Find the inverse of the matrix  $\begin{bmatrix} 4 & 2 \\ -3 & 1 \end{bmatrix}$
8. What is cluster sampling?
9. What is frequency distribution?
10. Explain the functions of an average.
11. What is sub divided bar diagrams?
12. Explain correlation graph.
13. What is probable error?
14. What are the conditions for using Rank correlation?
15. Explain regression line.

**(Ceiling: 25 Marks)**

**Part B** (Paragraph questions)

Answer *all* questions. Each question carries 5 marks.

16. Solve  $2^{2x+3} = 4^{3-x}$ .
17. Solve  $4x^2 - 12x + 9 = 0$  using quadratic formula.
18. Solve using Crammers' Rule  $2x - 3y = 3$ ;  $4x - y = 11$ .
19. Find the Rank of  $A = \begin{bmatrix} 5 & 2 & 1 \\ 0 & 1 & 3 \\ 2 & 1 & 0 \end{bmatrix}$
20. What is quartile deviation?
21. Briefly explain the concept of Skewness.
22. How the regression line can be constructed?
23. Explain the concept of least square.

**(Ceiling: 35 Marks)**

**Part C** (Essay questions)

Answer any *two* questions. Each question carries 10 marks.

24. Draw the graph of the following equations and locate the point of intersection;  
 $2x - 3y - 3 = 0$   $3x - 2y - 7 = 0$ .
25. Calculate Standard deviation of the two series and state which one is more variable Marks : 20-30 30-40 40-50 50-60 60-70 Section A : 5 10 25 5 5 Section B : 7 15 30 15 8.
26. Draw Lorenz curve for 2 groups of individuals (A & B) based on the following data and compare the inequality of the groups A & B  
Income : 1000-1500 1500-2000 2000-2500 2500-3000 3000-3500  
Frequency A : 60 120 300 80 40 Frequency B : 150 250 100 70 30.
27. Explain various types of Correlation.

**(2 × 10 = 20 Marks)**

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