MAY 2023 **U/ID 46507/UCC3C**

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 2 = 20$ marks)

Answer any TEN questions.

1. Write down the formula for secant and false position method.

2. Write a formula for Simpson's rule.

3. Find A.M. for the following data :

x :	1	2	3	4	5
y :	4	6	8	9	3

4. What is Standard Error?

5. What is Rank Correlation?

6. What is Normal Distribution?

7. What is regression?

8. What is Binomial Distribution?

9. What is Central Tendency?

10. What is Runge-Kutta Method?

11. Define Bisection method.

12. What is Median?

PART B — ($5 \times 5 = 25$ marks)

Answer any FIVE questions.

13. Obtain a root of the equation correct to four decimal places $x^3 - 4x - 9 = 0$ by False Position Method.

14. Find the Inverse of the Matrix

$$\begin{bmatrix} 4 & 1 & 2 \\ 2 & 3 & -1 \\ 1 & -2 & 2 \end{bmatrix}$$ by Gauss Elimination Method.

15. Explain correlation methods with examples.

16. Discuss Random Sample Methods with examples.

17. Explain the Simpson's 1/3 rule.

18. Explain the trapezoidal rules with examples.

19. Explain the measure of central tendency.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

20. Find the Inverse of the Matrix by Gauss Elimination Method.

21. Find a root of the equation $x^3 - 4x + 1 = 0$ by Bisection method.

22. Find the coefficient of correlation for the following :

x :	21	22	23	24	25	26	27	28	29	30
y :	40	39	39	35	34	34	34	31	28	25

23. Calculate the first four moments about the Mean for the following data :

x :	1	2	3	4	5	6	7	8	9
y :	1	6	13	25	30	22	9	5	2

24. Dividing the range into 10 equal parts, find the appropriate value of $\int_0^x \sin x dx$ by Trapezoidal rule.

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