D 51712 **(Pages : 2)** **Name.....**

Reg. No.....

THIRD SEMESTER (CBCSS—UG) DEGREE EXAMINATION
NOVEMBER 2023

B.C.A.

BCA 3C 05—COMPUTER ORIENTED NUMERICAL AND STATISTICAL METHODS

(2019—2022 Admissions)

Time : Two Hours Maximum : 60 Marks

Section A (Short Answer Type Questions)

Answer **all** *questions.*
Each correct answer carries a maximum of 2 *marks.*
Ceiling 20 *marks.*

1. Define Arithmetic Mean.
2. Define Principle of least squares.
3. Distinguish between Relative measure and Absolute measure of Dispersion ?
4. Define Transcedental equations.
5. Write the properties of Probability.
6. Distinguish between linear and nonlinear regressions.
7. Write the formula for Rank correlation.
8. Explain Geometric Mean ?
9. Define Sample space with an example ?
10. If $r = 0.6$ and $n = 64$, find probable Error and Standard Error.
11. What are the properties of regression Lines ?
12. Define Numerical Integration.

Turn over

Section B (Short Essay Type Questions)

Answer **all** *questions.*
Each correct answer carries a maximum of 5 *marks.*
Ceiling 30 *marks.*

13. Explain Union, Intersection and Compliment of two events ?

14. Compute Mean deviation about Median and the Co-efficient of Mean Deviation for the frequency distribution given below :

Size	:	5	8	13	20	25	30	40
Frequency	:	2	10	20	35	18	7	5

15. Evaluate the sum $S = \sqrt{3} + \sqrt{5} + \sqrt{7}$ to significant digits and find its absolute and relative errors.

16. Find a root of the equation $2x - 3\sin x - 5 = 0$ by Regula-Falsi Method.

17. From the following table find the value of $f(x)$ at $x = 25.5$ and $x = 28.5$:

X	:	25	26	27	28	29
$f(x)$	:	40	42	45	50	51

18. Find Cube Root of 31 Using Newton Raphson Method.

19. Explain forward Differences using Forward Difference Table.

Section C (Essay Type Questions)

Answer any **one** *question, correct answer carries* 10 *marks*

20. Calculate Mean and Median for the following :

No. of children	:	0–2	2–4	4–6	6–8	8–10	10–12	12–14
Families	:	42	26	26	35	60	45	50

21. Find a real root of the equation $x^3 - 2x - 5 = 0$ by Bisection Method.

(1 × 10 = 10 marks)