D3BCA2102 (PAGES 2) Reg.No.....

Name: .....

THIRD SEMESTER UG DEGREE EXAMINATION, NOVEMBER 2022

(Regular/Improvement/Supplementary)

BCA

GBCA3C05T: COMPUTER ORIENTED NUMERICAL AND STATISTICAL METHODS

Time: 2 Hours **Maximum Marks: 60**

SECTION A: Answer the following questions. Each carries *two* marks.
(Ceiling 20 Marks)

1. What is the number of significant digit of 3600.0?
2. Define intersection of two events.
3. What are the methods available for Interpolation?
4. Define standard deviation.
5. What do you mean by the method of false position?
6. Calculate the Geometric mean of 1,4,8.
7. Define discrete and continuous random variables.
8. What is curve fitting?
9. Define probability density function.
10. Explain Lorenz curve
11. What is the probability of getting a spade or an ace from a pack of cards?
12. Define simple correlation.

SECTION B: Answer the following questions. Each carries *five* marks.
(Ceiling 30 Marks)

13. Find the root of the equation $x^2 - 4x - 10 = 0$ by using bisection method.
14. Define distribution function of a random variable and write down its properties.
15. From the data given below, find Mode and Median.

Age	10 - 20	20 – 30	30 – 40	40 - 50	50 – 60	60 – 70	70 – 80	80 – 90
No.of persons	5	9	13	21	20	15	8	3

16. Given the data

X	1.2	1.3	1.4	1.5
f(x)	1.063	1.091	1.119	1.145

Calculate f (1.35) using Newton's Interpolation polynomial of order 1 through 3.

17. Evaluate the integral $\int_{-1}^{1} e^x dx$ using Simpson's $\left(\frac{1}{3}\right)^{rd}$ rule.

(PTO)

18. Find k and P$(12 \leq X \leq 20)$ andP$(X > 16)$ if following is pmf of X

X	8	12	16	20	24
f(x)	$\frac{1}{8}$	$\frac{1}{6}$	$\frac{k}{6}$	$\frac{1}{4}$	$\frac{1}{12}$

19. Calculate Spearman's Rank Correlation Co-efficient from the following data

Marks in Mathematics:	35	15	30	22	12	5	28	18	41	4
Marks in Music	39	25	22	28	12	17	18	19	34	16

SECTION C: Answer any *one* question. Each carries *ten* marks.

20. Calculate Quartile deviation and Standard deviation from the following data:

Mark	10 - 20	20-30	30-40	40-50	50-60	60-70	70-80
No. of students:	60	45	120	25	90	80	60

21. From the following data find the two regression equations and most likely value of y when X = 30

X	25	28	35	32	31	36	29	38	34	32
Y	43	46	49	41	36	32	31	30	33	39

(1× 10 = 10 Marks)