BBDU

School of Computer Applications

Roll No.	1	2	3	0	2	1	1	0	2	6

BCA Second Sessional Test 2024-25

Third Semester

BCAN13204: Numerical & Statistical Methods

Time: 1 Hour

Max. Marks: 30

Section-A

Q1. Attempt all parts. (5 x 1 = 5)

a. Write Newton's Formula for Numerical Differentiation.
b. Write Trapezoidal Formula for Numerical Integration.
c. Write the normal equations to fit a parabola.
d. What is the Relation between Mean, Median and Mode?
e. What do you mean by Standard Deviation

Section-B

Q2. Attempt any two parts. (2 x 7.5 =15)

a. Evaluate $\int_4^{5.2} logx\ dx$ using Simpson 1/3 Rule.
b. Use Picard method to find y for x = 0.2 given that $y'=x-y$ and $y(0)=1$.
c. Find the curve of best fit of the type $y=a+bx$ to the following data:

X	1	2	3	4	5
y	2	4	6	8	10

d. Find the curve of best fit of the type $y=ae^x$ to the following data:

X	1	5	7	9	12
y	10	15	12	15	21

Section-C

Q3. Attempt any one parts. (1 x10 = 10)

a. Using Euler's method find y for x = 0.6 given that $y'=1-2xy$, $y(0)=0$ taking h=0.2
b. Use Runge-Kutta method of fourth order to find the numerical solution at x = 1.4 for $y' = y + x$, $y(1) = 0$. Assume step size h = 0.2
c. Find the Median of the following distribution

X	20-25	25-30	30-35	35-40	40-45	45-50
F	5	70	100	180	150	120