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RNLKWC/B.Sc.-CBCS/VS/BCA-DSE2P/22

2022

BCA

[HONOURS]

(CBCS)

**(B.Sc. Fifth Semester End Examination-2022)**

**PAPER-DSE2P (Practical)**

*Full Marks: 20*

*Time: 02 Hrs*

*The figures in the right hand margin indicate marks*

*Candidates are required to give their answers in their own words as far as practicable*

*Illustrate the answers wherever necessary*

**Answer any one question**

**1x15=15**

1. Write a program to find  $\int_0^1 \frac{dx}{1+x^2}$  by Trapezoidal rule, taking n=6
2. Write a program to find  $\int_0^1 (4x-3x^2)dx$  by Simpson's  $\frac{1}{3}$  rule taking n=10.
3. Write a program to find the root of the equation  $x^3 - 4x - 9 = 0$  using Bisection method.
4. Write a program to find a real root of the equation  $x^3 - 8x - 4 = 0$  using newton Raphson method
5. Write a program to determine y for x=0.1, given,  $\frac{dy}{dx} = \frac{y-x}{y+x}$  taking h=0.02 by Euler's method.

(2)

6. Write a program to find  $y(0.4)$ , given  $\frac{dy}{dx} = x - y, y(0) = 1$  using R.K. 4<sup>th</sup> order method.
7. Write a program to find the value of  $y$  when  $x=0.5$  for following table

$x$	0	1	2	3
$f(x)$	1	2	11	34

Using Newton's forward interpolation.

8. Write a program to solve the following system of equation using Gauss-Elimination method

$$2x_1 - 3x_2 + 4x_3 = 8$$

$$x_1 + x_2 + 4x_3 = 15$$

$$3x_1 + 4x_2 - x_3 = 8$$

9. Write a program to find  $\int_0^1 (4x - 3x^2) dx$  by Simpson's  $\frac{3}{8}$  rule taking  $n=10$
10. Write a program to find the root of the equation  $x^3 + 2x - 2 = 1$  use Regula falsi method..

Viva - 03

PNB - 02