SHRIMATHI DEVKUNVAR NANALAL BHATT VAISHNAV COLLEGE FOR WOMEN
(AUTONOMOUS)
(Affiliated to the University of Madras and Re-accredited with 'A+' Grade by NAAC)
Chromepet, Chennai — 600 044.
M.Sc. - END SEMESTER EXAMINATIONS NOVEMBER - 2022
SEMESTER - II
20PPHCT2007 - Computational Methods and "C" Programming

Total Duration : 2 Hrs 30 Mins.   Total Marks : 60

Section A

Answer any **SIX** questions $(6 \times 5 = 30$ Marks$)$

1. Find the roots of the equation x^2 - 4x $- 10 = 0$ using bisection method.

2. Describe the Newton-Raphson methods with example.

3. Classify the different approaches to solve the simultaneous linear equations.

4. Illustrate the Gaussian elimination.

5. Explain the Newton backward interpolations.

6. Apply the fitting straight line - Curve fitting using Least square method

X	Y
5	1
4	2
3	3
2	4
1	5

7. Explain the Simpon's rule with suitable integrals.

8. Examine the Integer and floating-point arithmetic expressions.

Section B

Part A

Answer any **TWO** questions $(2 \times 10 = 20$ Marks$)$

9. Describe the Newton-Raphson methods with example.

10. Solve the following using basic Gauss elimination method
    $3x_1+6x_2+x_3=16$
    $2x_1+4x_2+3x_3=13$
    $x_1+3x_2+2x_3=9$

11. Differentiate between curve fitting and squares fitting.

12. Compare the Euler and RungeKutta methods.

Contd...

Part B

Compulsory question $(1 \times 10 = 10$ Marks$)$

13. Compute the C program for Lagrange Interpolation.

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