42 (2) CONM 3

2015

COMPUTER ORIENTED NUMERICAL METHODS

Paper : 2.3

Full Marks : 70

Time : Three hours

***The figures in the margin indicate
full marks for the questions.***

*Answer **any seven.***

1. What do you mean by errors ? What are different types of errors ? Explain with an example. **10**

2. Solve the following system of equations using Gaussian technique **10**

$$10x+2y+z=9$$
$$x+10y-z=-22$$
$$-2x+3y-10z=22$$

3. Write a computer program to implement Simpson's $\frac{1}{3}$rd rule. **10**

4. Obtain Simpson's $\frac{3}{8}$ th rule. 10

5. Evaluate $\int\limits_{0}^{1}\frac{1}{1+x^2}$ by using any suitable technique of numerical Integration. 10

6. Deduce Newton's forward or backward interpolation formula. 10

7. Write a computer program to implement Gauss-Jordan method. 10

8. Obtain Lagrange's formula. 10

9. Write a program to implement Gauss-Seidal method. 10

10. Describe the methods of LPP. Solve to get the $max \ Z = 2x_1 + 5x_2 + x_3$ subject 10

    to $x_1 + 2x_2 + x_3 \leq 200$
        $3x_1 + 3x_3 \leq 350$
        $3x_1 + 4x_2 \leq 300$
        $x_1, x_2, x_3 \geq 0$

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