UNIT I

1. PART-C

Using Newton's iterative method find the root between 0 and 1 of $x^3 = 6x - 4$ **correct to two decimal places.**

2.. Find the real positive root of **3x –cosx – 1 = 0** by Newton's method correct to6 decimal places

3. Find a root of $x\log_{10} x - 1.2 = 0$ by Newton's method correct to 3 decimal places

4. Find a root of $x\log_{10} x - 12.34 = 0$ start with $x_0 = 10$ by Newton's method correct to 3 decimal places

5. Obtain Newton's Iterative formula for finding $\sqrt{N}$ **where N is a** positive real number. Hence evaluate $\sqrt{142}$

6. Find the iterative formula for finding the value of $\frac{1}{N}$ where N is a real number, using Newton –Raphson method .

Hence evaluate $\frac{1}{26}$ correct to 4 decimal places.

7. Solve the system of equations by (i) Gauss elimination method (ii) Gauss- Jordan method

10x + y + z = 12

2x + 10y + z = 13

x + y + z = 7

8. Solve the system of equations by (i) Gauss elimination method (ii)Gauss Jordan method.

10x-2y+3z = 23, 2x+10y-5z = -33, 3x-4y+10z = 41.

9. Solve the system of equations by (i) Gauss- Jacobi method (ii) Gauss- Seidal method

27x +6 y - z = 85

x + y + 54z = 110

6x + 15 y +2 z = 72

10. Solve the following system of equations by using Gauss Seidel Method.

$9x - y + 2z = 9,\ \ x + 10y - 2z = 15,\ \ \ 2x - 2y - 13z = -17$

11. Find the inverse of $\begin{pmatrix} 1 & 3 & 3 \\ 1 & 4 & 3 \\ 1 & 3 & 4 \end{pmatrix}$ using Gauss Jordan Method

12. Using Gauss- Jordan method, Find the Inverse of the matrix $\begin{bmatrix} 2 & 2 & 3 \\ 2 & 1 & 1 \\ 1 & 3 & 5 \end{bmatrix}$

13. Find the numerically largest eigen value of $A = \begin{pmatrix} 3 & -5 \\ -2 & 4 \end{pmatrix}$ by using power method.

14. Find the numerically largest eigen values of $A = \begin{pmatrix} 25 & 1 & 2 \\ 1 & 3 & 0 \\ 2 & 0 & -4 \end{pmatrix}$ by using power method upto three decimal accuracy.

15. .Determine the Largest eigen value and the corresponding eigen vector of the matrix $\begin{bmatrix} 2 & 2 & 3 \\ 2 & 1 & 1 \\ 1 & 3 & 5 \end{bmatrix}$