SRM Institute of Science and Technology

Department of Mathematics

21MAB206T- Numerical Methods and Analysis

UNIT –I Tutorial Sheet-3

Part-A

1. Solve the system of equation by Gauss Jacobi method

$14x - 5y = 5.5;$

$2x + 7y = 19.3$ $\quad Ans.\ x = 1.25,\ y = 2.40$

2. Solve the system of equation by Gauss Seidel method

$2x + y = 3;$

$7x - 3y = 4$ $\quad Ans.\ x = y = 1$

3. State the conditions for the convergence of Gauss-Seidel iterative method for solving a system of simultaneous algebraic equations.

Part-B

4. Solve the following system of equation by Gauss Jacobi method

$30x - 2y + 3z = 75;$

$2x + 2y + 18z = 30;$

$x + 17y - 2z = 48.$ $\quad Ans.\ x = 2.45,\ y = 1.62,\ z = 3.79$

5. Solve the system of equation by Gauss Seidel method

$2x + y + z = 4;$

$x + 2y + z = 4;$

$x + y + 2z = 4.$ $\quad Ans.\ x = y = z = 1$

6. Solve the system of equation by Gauss Seidel method

$8x + y + z = 8;$

$2x + 4y + z = 4;$

$x + 3y + 5z = 5.$ $\quad Ans.\ x = 0.876; y = 0.419; z = 0.574.$

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