VIGNAN'S FOUNDATION FOR SCIENCE, TECHNOLOGY & RESEARCH
(Deemed to be University) - Estd. u/s 3 of UGC Act 1956

SCHOOL OF APPLIED SCIENCE & HUMANITIES

DEPARTMENT OF MATHEMATICS

Subject : Linear Algebra | Subject Code : 25MT103

Sem. : I | Academic Year : 2025-2026

Section : 7 | Regulation : R25

Module 1 - T5 - Assignment 3

1. Compute LU (Doolittle) for $A = \begin{pmatrix} 2 & -1 & 1 \\ 4 & 1 & -1 \\ -2 & 2 & 3 \end{pmatrix}$ and solve $Ax = \begin{pmatrix} 1 \\ 2 \\ 3 \end{pmatrix}$.

2. Use Gauss--Jordan to find RREF and solution for:

$$2x + 4y - 2z = 2$$
$$-x - y + z = -1$$
$$x + 2y + 3z = 6$$

3. Determine consistency and solve if possible:

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