Mathematics

CC - 5 (Common Core Course - 5): Theory - "Linear Algebra"

Block - I : Vector Spaces

Unit - 1 : Vector Spaces and Subspaces
Unit - 2 : Basis and Dimension
Unit - 3 : Quotient Spaces - Isomorphisms

Block - II : Linear Transformations

Unit - 4 : Linear Transformations
Unit - 5: Rank and Nullity of a Linear Transformation
Unit - 6 : Matrix of a Linear Transformation

Block - III : Matrices - Characteristic Values and Characteristic Vectors

Unit - 7 : Characteristic Values and Characteristic Vectors
Unit - 8 : Cayley - Hamilton Theorem and Its Applications
Unit - 9 : Elementary Transformations and Reduction to Normal Form

Block - IV : Quadratic Forms and Inner Product Spaces

Unit - 10 : Quadratic Forms
Unit - 11 : Inner Product Spaces
Unit - 12 : Orthogonality and Gram-Schmidt Orthogonalisation

Core Course - 5: Practical - "Linear Algebra "

Block - I : Vector Spaces and Linear Transformations

Unit - 1 : Vector Spaces and Subspaces
Unit - 2 : Basis and Dimension
Unit - 3 : Quotient Spaces - Isomorphisms
Unit - 4 : Rank , Nullity and Matrix of a Linear Transformation

Block - II : Characteristic Values and Characteristic Vectors ; Quadratic Forms and Inner Product Spaces

Unit - 5 : Characteristic Values and Characteristic Vectors ; Cayley - Hamilton Theorem
Unit - 6 : Elementary Transformations and Reduction to Normal Form
Unit - 7 : Quadratic Forms and Inner Product Spaces
Unit - 8 : Orthogonality and Gram-Schmidt Orthogonalisation