AIT 122 DISCRETE MATHEMATICS 3(3+0)

UNIT I

Predicate Calculus

Introduction, Objectives, Predicates, Statement Functions, Variable and Quantifiers, Free and Bound Variables, Special Valid Formulas Involving Quantifiers - Theory of Inference for The Predicate Calculus.

UNIT II

Fuzzy Sets

Some Useful Definitions, Basic Operations On Fuzzy Sets Image And Inverse I Mages, I-V Fuzzy Sets, Fuzzy Relations.

UNIT III

Lattices

, POset, Lattice as a POset, Properties of Lattices, Lattices as Algebraic Systems, Sublattices, Complete Lattices, Bounds of Lattices, Distributive Lattices, Complemented Lattice

UNIT IV

Boolean Algebra

Introduction, Definition and Properties, Sub-Boolean Algebra Direct Product, Atoms, Stone's Representation Theorem. Boolean Expressions and their Equivalences. Min term And Max Terms. Boolean Algebra, Values Of Boolean Expressions, Canonical Forms, Boolean Functions, Symmetric Boolean Functions, Switch problems, Gates.

UNIT V

Graph Theory

Basic Concept of Graph Theory, Basic Definitions, Path, Reachability and Connectedness, Matrix Representation of Graphs, Trees, Types of Graph.

Reference Books

1. Discrete Mathematical Structures With Application To Computer Science; (Mcgraw Hill - New Delhi) By Tremblay, J.P. & Manohar
2. Discrete Mathematics and Its Applications (Mcgraw Hill - New Delhi) By Kenneth Rosen.
3. Applied Discrete Structures For Computer Science (Gulgotia Publications Pvt.Ltd. New Delhi) By Alan Doerr & Kenneth L.
4. Discrete Mathematical Structures For Computer Science (Prasntice Hall Of India Pvt Ltd., New Delhi) By Kolman, B& Busby R.C.
5. Fuzzy Sets And Fuzzy Logic. Theory And Applications (Printice Hall Of India) By Georgr. Klir/Bo Yuan