

Unit – 1

Introduction

Difference between Symbolic Logic and Traditional Logic, Use of Symbols, Modern Classification of Propositions, Truth and Validity

Unit - 2

Basic Apparatus for Propositional Calculus

Variables, Constants, Symbols for Conjunction, Implication, Disjunction, Material Equivalence and Negation, Translation of Language into Symbolic Expressions, Truth Function, Truth Functional Connectives, Argument Forms and Arguments, Statement Forms and Statements

Unit - 3

Decision Procedure and other Methods

Truth-table Method - Basic Truth-tables, Construction of Truth-tables, Direct and Indirect Truth-table methods as Applied to Argument Forms, Tautology, Contradiction and Contingent, Short-cut Truth-table method, Case-analysis Method, C.N.F. Method and Truth-tree Technique, Natural Deduction Method, Conditional Proof Method and Reduction ad Absurdum. Method

Unit – 4

Predicate Calculus

Distinction between Propositional Calculus and Predicate Calculus - Symbolic Language of the Predicate Calculus - The Interpretation of Quantifiers - Multiply General Propositions and Relational Propositions, Truth-table and Natural Deduction Methods in Predicate Calculus - The rules of Instantiation and Generalization and their restrictions

Unit - 5

Axiomatic method: Proving the properties of axiom systems

Books for Study: (Relevant Chapters only)

1. Dr P.Balasubramanian, Symbolic Logic And Its Decision Procedures,
2. Irving M Copi & Carl Cohen, Introduction to Logic, 10th edition
3. Norman L. Thomas, Modern Logic
4. William J. Kilgore, An Introductory Logic
5. Bangs L. Tapscott, Elementary Applied Symbolic Logic