
MA5350 Fundamentals of Discrete Mathematics

Logic: Connectives, quantifiers, validity, satisfiability, consequences, equivalence, logical laws, deductions, conjunctive and disjunctive normal forms of truth functions.

Set Theory: Relations and functions, cardinality, Cantor-Schroder-Bernstein theorem, finite and infinite sets, countable and uncountable sets, continuum hypothesis, axiom of choice, well ordering principle, Zorn's lemma.

Graph Theory: Relations and digraphs, simple graphs, paths and cycles, connectedness, trees, Hamiltonian and Eulerian graphs, planar graphs.

References :

Texts books:

1. R.R. Stoll, Set Theory and Logic, Dover Publications Inc., New York, 1979.
2. J.A.Bondy and U.S.R.Murty, Graph Theory, Springer-Verlag, New York, 2008.

References:

1. A.Singh, Logics for Computer Science, PHI Learning, New Delhi, 2003.
2. J.R.Munkres, Topology, PHI Learning, New Delhi, 2001.
3. P.R.Halmos, Naive set Theory, Springer-Verlag, New York, 1974.
4. J.L.Mutt, A.Kandel, and T.P.Baker, Discrete Mathematics for Computer Science and Mathematics, PHI Learning, New Delhi, 2003.
5. T. Oshy, Discrete Mathematics with Applications, Elsevier, New York, 2004.
6. B.West, Introduction to Graph Theory, 2nd Ed., PHI Learning, New Delhi, 2003.
