M.Sc., COMPUTER SCIENCE

I YEAR – I SEMESTER
COURSE CODE: 7MCE1C1

CORE COURSE-I–APPLIED MATHEMATICS FOR COMPUTER SCIENCE

Unit I

LOGIC: TF Statements – Connectives – Atomic and Compound Statements – WFF – Truth Table of a Formula – Tautology – Tautological Implications and Equivalence of Formulae.

Unit II

NORMAL FORMS – Principal Normal Forms – Theory of Inference – Open Statements – Quantifiers – Valid Formulae and Equivalence – Theory of Inference for Predicate Calculus.

Unit III

GRAPH THEORY: Basic Concepts – Matrix representation of Graphs: Trees: Definition – Spanning Trees – Rooted Trees – Binary Trees

Unit IV

LINEAR PROGRAMMING PROBLEM: Mathematical Formulation – Graphical Solution – Slack an Artificial Variables – Simplex method – Two phase method.

Unit V

TRANSPORTAION PROBLEM – Transportation Table – Solution of Transportation Problem – Testing for Optimality – Assignment Problem – The Assignment Method – Special Cases in Assignment Problems.

Text Books:

1. Discrete Mathematics – Dr. M.K.Venkataraman, Dr N.Sridharan, N.Chandrasekaran- The National Publishing Company – Reprint 2003 (Unit I, II and III)
2. Operation Research – Kantiswarap, P.K.Gupta, Man Mohan- Sultan Chand & Sons – Reprint 2011.

Book for Reference:

1. Discrete Mathematical Structures with Applications to Computer science – J.P.Trembley, R.Manohar Tata McGraw Hill.

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