Subject Code : SYMM1

ALLIED : MATHEMATICS (DISCRETE STRUCTURES – I)

UNIT – I

Sets – set operations – Union Intersection – Complementation – symmetric Difference – Powersets cartesion product – Relations – functions – Inverse functions and composition of functions.

UNIT – II

Matrices – Types of Matrices – Addition, Multiplication of Matrices – Inverse of a Matrix – Solving system of equations in three Unknowns by CRAMERS RULE.

UNIT – III

Groups – Types – Properties of groups – Semi Groups – Monoids – Problems in Groups – cyclic Groups and subgroups.

UNIT – IV

Graph – Theory Basic concepts – Finite and Infinite Graphs – Incidence and Degree ideas on vertices – Isomorphism sub graphs, walks – paths and circuits.

UNIT – V

Introduction to computability Theory – Finite State Acceptors and Regular Grammers.

Tex Book:

1. For Units I,II
   "Discrete Maths", by B.S.Vatssa; Wishwa Prakashan (A Division of Wilcy Eastern Limited) 1993.
2. For Unit III:
   "Algebra", by Arugam Issac. New Gamma Publishing – House – Palayamkottai 1997.
3. For Unit IV
   "Graph Theory", by Narsing Deo; Prentice Hall of India – (P) Ltd. New Delhi 1997.
4. For Unit V
   "Discrete Mathematical Structures", by J.P.Tremblay and R.Manohar. McGraw Hill International Editions, 1987.

Reference Books:

1. "Theory of computing", by John C-Martin Mc-Graw Hill International Editions – 1993.
2. "Modern Algebra", by K.S.Narayanan – Manicka Vachagam Pillai (S.Viswanathan – Printers and Publishers (pvt) Ltd., Madras – 1993.