



B. P. Poddar Institute of Management & Technology

Department of Information Technology

Lesson plan

Stream : Information Technology

Subject : Discrete Mathematics

Subject Code : PCCCS 401

Faculty Name : Ranjit Haldar

Lecture No.(L)	Description	Reference(s)	Teaching Methods	Teaching Aids
L1	Introduction to Propositional Logic - Syntax, semantics	TE1, RE1	presentation , Talk and Board wok	White board and Projector
L2	Logical Connectives - Negation, Conjunction, Disjunction, Exclusive OR. Problem solving using logical connectives.	TE1, RE1	presentation , Talk and Board wok	White board and Projector
L3	Logical Connectives - Implication, BiConditional, Problem Solving	TE1, TE2, RE2	presentation , Talk and Board wok	White board and Projector
L4	Propositional Equivalences	TE1, TE2, RE1	presentation , Talk and Board wok	White board and Projector
L5	Rules Of Inferences	TE1, RE1	presentation , Talk and Board wok	White board and Projector
L6	The use of Quantifiers - Universal and Existential Queantifiers	TE1, RE1	presentation , Talk and	White board and



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			Board wok	Projector
L7	Problem Solving using The Rules of Inferences.	TE1, RE1, RE2	presentation , Talk and Board wok	White board and Projector
L8	Proof Technique: Forword Proof, Proof by contradiction, proof by contraposition	TE1, RE1, RE2	presentation , Talk and Board wok	White board and Projector
L9	Disjunctive Normal form and Conjunctive Normal form.	TE1, TE2, RE1	presentation , Talk and Board wok	White board and Projector
L10	Problem Solving	TE1, RE1, RE2	presentation , Talk and Board wok	White board and Projector
L11	Set Theory - Operation and Laws of Set, Cartesial Product, Problem Solving.	TE1, TE2, RE1	presentation , Talk and Board wok	White board and Projector
L12	Set - Finite and Infinite Set, Countable and uncountable set. The power Set Theorem, Problem Solving	TE1, TE2, RE1	presentation , Talk and Board wok	White board and Projector
L13	Function - Introduction, Sum and Product of a function, Problem Solving	TE1, RE1	presentation , Talk and Board wok	White board and Projector
L14	Function - one one function, onto function Bijective, Inverse function, Problem Solving	TE1, RE1	presentation , Talk and Board wok	White board and Projector
L15	Relation - Reflexive, Symmetric, Transtive, Equivalence Problem Solving	TE1, RE1	presentation , Talk and Board wok	White board and Projector



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L16	Partial Ordering Relation, POSET,	TE1, RE1	presentation , Talk and Board wok	White board and Projector
L17	Problem Solving from SET, RELATION and FUNCTION	TE1, RE1, RE2	presentation , Talk and Board wok	White board and Projector
L18	Introduction to Mathematical Induction, The well ordering Principal.	TE1, RE1	presentation , Talk and Board wok	White board and Projector
L19	The Division algorithm: Prime Numbers, The Greatest Common Divisor: Euclidean Algorithm, The Fundamental Theorem of Arithmetic.	TE1, RE1	presentation , Talk and Board wok	White board and Projector
L20	Problem Solving	TE1, RE1, RE2	presentation , Talk and Board wok	White board and Projector
L21	Basic Counting Technique - -inclusion and exclusion, pigeon-hole	TE1, RE1	presentation , Talk and Board wok	White board and Projector
L22	Permutation	TE1, RE1	presentation , Talk and Board wok	White board and Projector
L23	Combination	TE1, RE1	presentation , Talk and Board wok	White board and Projector
L24	Problem Solving	TE1, RE1	presentation , Talk and Board wok	White board and Projector



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L25	Algebraic Structures and Morphism: Algebraic Structures with one Binary Operation, Semi Groups	TE1, RE1	presentation , Talk and Board wok	White board and Projector
L26	Monoids, Groups, Congruence Relation and Quotient Structures,	TE1, RE1	presentation , Talk and Board wok	White board and Projector
L27	Free and Cyclic Monoids and Groups, Permutation Groups, Substructures, Normal Subgroups	TE1, RE1	presentation , Talk and Board wok	White board and Projector
L28	Problem Solving	TE1, RE1, RE2	presentation , Talk and Board wok	White board and Projector
L29	Algebraic Structures with two Binary Operation, Rings, Integral Domain and Fields.	TE1, RE1	presentation , Talk and Board wok	White board and Projector
L30	Boolean Algebra and Boolean Ring, Identities of Boolean Algebra,	TE1, RE1	presentation , Talk and Board wok	White board and Projector
L31	Problem Solving	TE1, RE1, RE2	presentation , Talk and Board wok	White board and Projector
L32	Problem Solving	TE1, RE1, RE2	presentation , Talk and Board wok	White board and Projector
L33	Introduction to Graph and Tree - Degree, Connectivity, Path, Cycle, Sub Graph,	TE1, TE2, RE1	presentation , Talk and Board wok	White board and Projector
L34	Isomorphism, Eulerian and Hamiltonian Walks,	TE1, TE2,	presentation , Talk and	White board and



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		RE1	Board wok	Projector
L35	Problem Solving	TE1, TE2, RE1	presentation , Talk and Board wok	White board and Projector
L36	Graph Colouring	TE1, TE2, RE1	presentation , Talk and Board wok	White board and Projector
L37	Problem solving on graph coloring.	TE1, TE2, RE1, RE2	presentation , Talk and Board wok	White board and Projector
L38	Colouring maps and Planar Graphs	TE1, TE2, RE1	presentation , Talk and Board wok	White board and Projector
L39	Colouring Vertices, Colouring Edges, List Colouring	TE1, TE2, RE1	presentation , Talk and Board wok	White board and Projector
L40	Perfect Graph, definition properties and Example,	TE1, TE2, RE1	presentation , Talk and Board wok	White board and Projector
L41	Rooted trees, trees and sorting, weighted trees and prefix codes,	TE1, TE2, RE1	presentation , Talk and Board wok	White board and Projector
L42	Bi-connected component and Articulation Points, Shortest distances.	TE1, TE2, RE1	presentation , Talk and Board wok	White board and Projector
L43	Assignments & Revision			
L44	Assignments & Revision			



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L45	Assignments & Revision			
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TE1: Discrete Mathematics and Its Applications

Textbook by Kenneth H. Rosen

TE2: Discrete Mathematics by Das & Pal.

RE1: J. P. Tremblay and R. P. Manohar, Discrete Mathematics with Applications to Computer Science, Tata McGraw-Hill, 1997

RE2: S. Lipschutz and M. L. Lipson, Schaum's Outline of Theory and Problems of Discrete Mathematics, 2nd Ed., Tata McGraw-Hill, 1999.

Faculty Signature

HOD-IT