SRM Institute of Science and Technology
College of Engineering and Technology

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
SRM Nagar, Kattankulathur – 603203, Chengalpattu District, Tamilnadu

Academic Year: 2021-22 (Even)

Test	: CLAT-1	Date	: 07/04/2022
Course Code & Title :18MAB302T-Discrete Mathematics for Engineers		Duration	: 1 Period (50 minutes)

18MAB302T – Discrete Mathematics for Engineers		Program Outcomes (POs)															
		Graduate Attributes													PSO		
S. No.	Course Outcomes (COs)	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Problem solving in sets, relations and functions.	M	H	M						M	M		H	-	-	-
2	Solving problems in basic counting principles, inclusion exclusion and number theory.	M	H		M	M				M			H	-	-	-
3	Solving problems of mathematical logic, inference theory and mathematical induction.	M	H							M			H	-	-	-
4	Gaining knowledge in groups, rings and fields. Solving problems in coding theory.	M	H		M					M			H	-	-	-
5	Gaining knowledge in graphs and properties. Learning about trees, minimum spanning trees and graph coloring.	M	H	M						M	M		H	-	-	-
6	Learning mathematic0al reasoning, combinatorial analysis, algebraic structures and graph theory.	M	H							M			H	-	-	-

Year & Sem : II & III   Max. Marks: 25

Course Articulation Matrix:

Part - A
(3 x 4 = 12 Marks)

Instructions: Answer all Questions

Q. No	Question	Marks	BL	CO	PO	PI .Code
1	Prove that $(A - C) \cap (C - B) = \emptyset$ analytically where A, B, C are sets.	4	2	1	1	1.1.1
2	Draw the Hasse diagram representing the partial ordering $\{(A, B) / A \subseteq B, A, B \in P(S)\}$ where $S = \{x, y, z\}$. Here P(S) denotes the power set of the set S.	4	3	1	2	2.1.1
3	Give an example of a relation R such that (i) R is reflexive, transitive but not symmetric. (ii) R is neither symmetric nor anti – symmetric.	4	3	1	2	2.4.4

Part – B
(1x 13 = 13 Marks)

4						
	a) Given $R = \{(1,1),(1,2),(1,4),(2,2),(2,3),(3,4),(4,1)\}$ defined on the set $A = \{1,2,3,4\}$, find the transitive closure of R using Warshall's algorithm.	7	3	1	2	2.1.3
	b) Prove that when two functions are bijective, then their composition will always yield a bijective function.	6	2	1	2	2.1.2

Course Outcome (CO) and Bloom's level (BL) Coverage in Questions

CO Coverage %

BL Coverage %
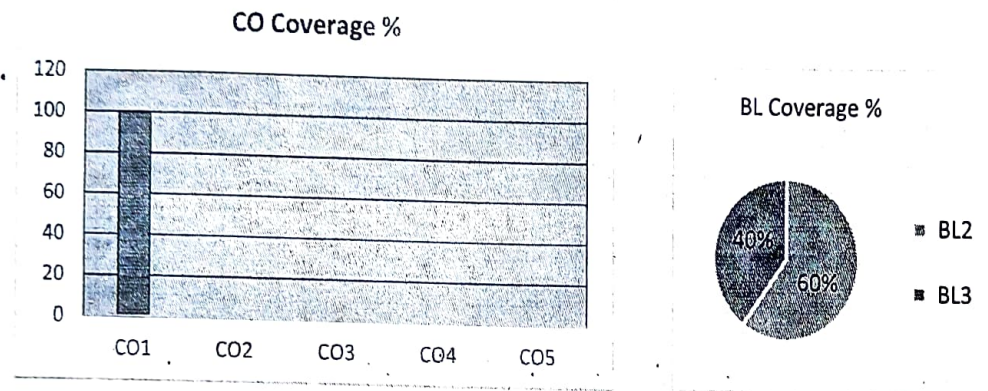
Approved by the Audit Professor/Course Coordinator