SRIVI INSTITUTE OF SCIENCE & TECHNOLOGY (Deemed to be University u/s 3 of UGC Act, 1996)

SRM INSTITUTE OF SCIENCE AND TECHNOLOGY

DEPARTMENT OF MATHEMATICS

18MAB302T-DISCRETE MATHEMATICS FOR ENGINEERS

SI.No. TUTORIAL SHEET 1-QUESTIONS-PART(A)		(Deemed to be University u/s 3 of UGC Act, 1956)	10MAD3021-DISCRETE MATHEMATICS FOR ENGINEERS		
1 Simplify the following using set theoretical laws: (A∩B)U(A∩B∩Č∩D)U(Â∩B) 2 Write the dual of (A∩B)U(A∩Č)U(Â∩B) 3 a)Give an example of arelation which is neither reflexive nor irreflexive? b)Can any relation which is irreflexive and symmetric be transitive?Justify? 4 Let X={1,2,3,4} and R={(x,y)/x>y}Draw the graph of R and also find its matrix. 5 Give a relation which is both partial order relation and equivalence relation on a set. Part - B 6 If A and B are any two sets prove analytically,a)A∩(B-C)=(A∩B)-(A∩C) b)A×(B∩C)=(A×B) ∩(A×C) 7 If R is a relation on Z defined by aRb iff a)3a+b is a multiple of 4 b)2a+3b=5n,n is an integer. Prove the above relations are equivalence relations. 8 Let R={(1,2), (3,4), (2,2)}, and S={(4,2), (2,5), (3,1), (1,3)} be relations on {1,2,3,4}. Find R°S,S°R, (R°S)°R, R°(S°R), R°R,S°S,R°R°R. 9 If the relation R on the set X={1,2,37} defined by aRb iff a=b(mod 3). Find the pairs in R, find the partition induced by the equivalence relation R on X. 10 For the poset {3,5,9,15,24,45} a)find the maximal and minimal elements. b)the greatest and the least elements. c)the upper bounds and LUB of {3,5} d)the lower bounds and GLB of {15,45}. 11 For the relation R={(1,1),(1,2),(1,3),(2,1),(2,2),(2,3),(3,1),(3,3),(4,4)} defined on X={1,2,3,4}, find the transitive closure of R using Warshall's algorithm. 12 For the relation R={(1,3),(1,4),(2,1),(2,3),(2,4),(3,4)} defined on X={1,2,3,4} find the			UNIT 1-SET THEORY & RELATIONS		
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