

Course Name: Discrete Mathematics and Social Graphs **Course Code:** 201DSL202

Seat No:

Day and Date:day, .../.../2022

Time:

Max. Marks- 50

Instructions:

- All Questions are compulsory.
- Figure to the right indicate full marks.

BT	CO's	Q.No.		Marks
		Q.1	All Questions are compulsory	20
1,2	CO2	a	1) $A = \{\alpha, \beta\}, B = \{1, 2, 3\}$ what are $A \times B, B \times A, (A \times B) \cap (B \times A)$ 2) Explain properties of binary relation.	6M
1,2	CO1	b	1) Define Well-formed formula with their Rules. 2) Obtain PDNF of the $Q \vee (P \vee \neg Q)$.	7 M
1,2	CO1	c	1) Define Lattice and State its properties. 2) Show that $(\neg P \wedge (\neg Q \wedge R)) \vee (Q \wedge R) \vee (P \wedge R) \Leftrightarrow R$	7 M
		Q.2	All Questions are compulsory.	10
1,2	CO3	a	1) Define following w.r.t graph i) Path ii) Connected graph OR 2) Short note on PERT	4
1,2	CO3	b	1) Explain different methods of storage representation of graph.	6
		Q.3	All Questions are compulsory	10
1,2	CO4	a	What is NetworkX in Python?	3
1,2	CO4	b	Write a note on Data Visualization in Python. OR What are the levels of visualization & Which technique are used for visualization?	7
		Q.4	Attempt any two out of three questions	10
1,2	CO5	a	A box contains 6 white balls and 5 red balls. in how many ways 4 balls can be drawn from the box if	5

			1. They are to be any color 2. All the balls to be of same color.		
1,2	CO5	b	In a class, 50% of all students play cricket and 25% of all students play cricket and volleyball. What is the probability that a student plays volleyball given that the student plays cricket?		5
1,2	CO5	c	Write a note on Bays theorem		5
