CMR TECHNICAL CAMPUS **UGC AUTONOMOUS**

B. Tech. III Sem Regular End Examinations, February-2024 Discrete Mathematics

Common to CSM, CSD, AIML

Time: 3 Hours

Max. Marks: 60

- i. This Question paper contains Part- A and Part- B.
- ii. All the Questions in Part A are to be answered compulsorily.
- iii. All Questions from Part B are to be answered with internal choice among them.

PART-A

 $10 \times 01 = 10 \text{ Marks}$

			Marks	CO	BL
1.	a b	Construct a truth table for $p \land q$. State Rule of Tatulogy.	1M 1M	CO1	L 2 L 2
	c d	Define onto function. State Asymmetry relation.	1M 1M	CO2 CO2	L 1 L 2
	e f	Define a lattice. Define a Semi group.	1M 1M	CO3 CO3	L 1 L 1
	g	In how many ways can 3 different coins be placed in 2 different purses?	1M	CO4	L 1
	h	State Binomial theorem.	1M	CO4	L 2
	i j	Define spanning tree. State Four color problem.	1M 1M	CO5	L 1 L 2
		PART- B			
			5 X 10 = 50 Marks		
			Marks	CO	BL
2.	a	Check the validity of the following argument.	5M	CO1	L5
		If Hyderabad is in Telangana then London is in England.			
		London is not in England.			
	ь	Therefore, Hyderabad is not in Telangana. Write the following propositions in symbolic form.	5M	COI	L4
		i)Some integers are divisible by 5.			
		ii)All real numbers are complex numbers.			

iii)All birds cannot fly.

Subject Code: 22 AM/DS 301PC

SET-I H7

HT NO:

7 R

т 1

L2

11 a Define a Binary Tree Explain types of binary trees with their properties.

6M

CO5

L1

b Find the chromatic number of the following graph.

4M

CO5


