Enroll. No._____

MARWADI UNIVERSITY
MU-FOT
CE-AI
Semester 4 - Summer

Subject : DISCRETE MATHEMATICS AND GRAPH THEORY (01MA0231)
Date : 08-Apr-2022 **Time : 1 Hours 15 Minutes** **Total Marks : 30**

Instructions :

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Que.1 (A) **Answer the following questions.** **[6]**

(1) Define Adjacency Matrix

(2) Define Disjunction

(3) Define Separable graph

(4) Define: Tautology

(5) Define Logical equivalents.

(6) Define Conjunction.

Que.2

(A) Prove the following using truth table: [6]

(i) $p \wedge (p \vee q) \equiv p$

(ii) $p \vee (p \wedge q) \equiv p$

(B) Define the Validity of the arguments. Check validity of [6]

$p \vee q$

$p \rightarrow r$

$q \rightarrow r$

$\therefore$ r

OR

(B) State and Prove Euler's formula [6]

Que.3

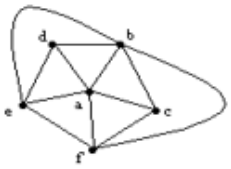
(A) Define Adjacency matrix. Draw K_4 , K_5 and K_6 graphs and write their adjacency matrices. [8]

(B) Explain chromatic number and what is chromatic number of Petersen graph [4]

OR

(A) State and prove both Absorption law using truth table [8]

(B) Verify the Euler theorem to the following graph: [4]



---Best of Luck---

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Difficulty Level	Weightage		No of Question	Total Marks	Question List
	Recommended	Actual			
High	20	43.75	5	21	1(A), 2(B), 3(B)
Low	20	14.58	2	7	1(A), 2(A)
Medium	60	41.67	6	20	1(A), 3(A)

Module Name	Weightage		No of Question	Total Marks	Question List
	Recommended	Actual			
Representation Graph using Matrix :	20	20.83	3	10	1(A), 3(A)
Logic and Predicates :	30	50.00	7	24	1(A), 2(A), 2(B), 3(A)
Planar and Non-planar Graphs :	50	29.17	3	14	2(B), 3(B)

Blooms Taxonomy	Weightage		No of Question	Total Marks	Question List
	Recommended	Actual			
Remember / Knowledge	20	10.42	5	5	1(A)
Understand	30	39.58	4	19	1(A), 2(A), 3(A), 3(B)
Apply	25	25.00	2	12	3(A), 3(B)
Analyze	15	12.50	1	6	2(B)
Evaluate	10	12.50	1	6	2(B)
Higher order Thinking	0	0.00	0	0