Roll No: | | | | | | | | | | | |

PRESIDENCY UNIVERSITY

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Bengaluru

Mid Term Examinations - October 2026

Date: 09/10/2026 **Time:** 09:30 AM - 11:00 AM

Course Code: CSS2266 **Course Name:** Theory of Computation

Semester: Fifth Semester **Max. Marks:** 50 **Weightage:** 50%

CO - Levels	CO1	CO2
Marks	82	98

PART A: Answer Following Questions. 10 M

Q.N.	Questions	M	CO	BT
1	Define a formal language and give one example.	2	CO1	BT2
2	What is an NFA?	2	CO1	BT2
3	What is meant by a language recognizer?	2	CO1	BT2
4	What is meant by DFA–NFA equivalence?	2	CO2	BT2
5	What is minimization of a finite automaton?	2	CO2	BT2

PART B : Answer Any 1 Following Questions. 10 M

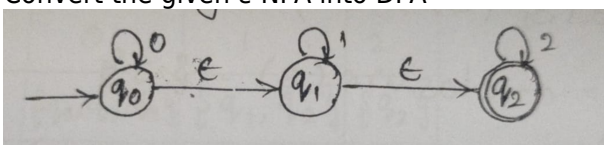
Q.N.	Questions	M	CO	BT
6	Explain alphabets, strings, languages, and operations on languages with suitable examples.	10	CO1	BT2
7	Explain the applications of Automata Theory and discuss the role of finite automata as language recognizers.	10	CO1	BT2

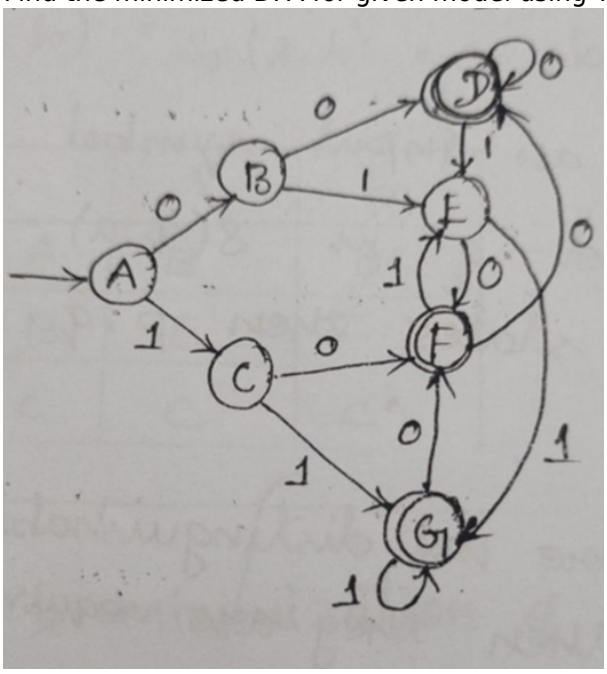
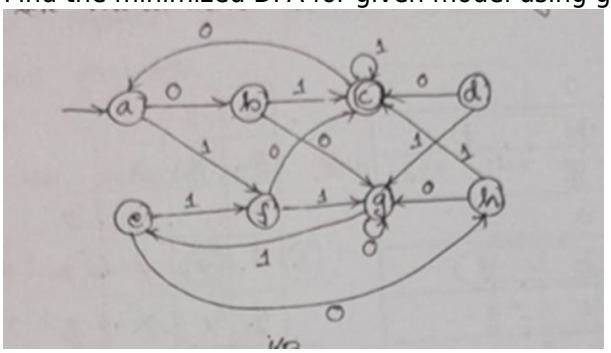
PART C: Answer Any 1 Following Questions. 10 M

Q.N.	Questions	M	CO	BT
8	Explain DFA, deterministic accepters, transition graphs, transition tables, and regular languages with one example string.	10	CO1	BT2
9	Explain NFA, its transition mechanism, accepted language, and the need for nondeterminism.	10	CO1	BT2

PART D: Answer Any 1 Following Questions. 10 M

Q.N.	Questions	M	CO	BT
10	Construct the equivalent DFA for the given NFA 	10	CO2	BT3

11	Convert the given ε-NFA into DFA 	10	CO2	BT3

PART E: Answer Any 1 Following Questions. 10 M				
Q.N.	**Questions**	**M**	**CO**	**BT**
12	Find the minimized DFA for given model using Table-Filling Algorithm 	10	CO2	BT3
13	Find the minimized DFA for given model using grouping method Algorithm 	10	CO2	BT3