RAMAPURAM SRM

SRM INSTITUTE OF SCIENCE AND TECHNOLOGY
RAMAPURAM CAMPUS
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING/CSBS
CLA-I
18CSC261T / FORMAL LANGUAGE AUTOMATA THEORY (SET – A)

Year/ Sem : II / III
Time : 50 Min

R	A	2	0	1	1	0	4	2	0	2	0	0	0	6

Date :29/10/21
Marks : 25

PART – A (1 X 5 = 5 MARKS)
ANSWER ALL THE QUESTIONS – EACH QUESTION CARRIES ONE MARK

			M
1.	Numbers of states require to accept string ends with 10		
	A. 3 B. 2 C. 1 D. 0		1
2.	Which among the following cannot be accepted by a regular grammar?		
	A.L is a set of numbers divisible by 2 B.L is a set of binary complement C.L is a set of string with odd number of 0 D.L is a set of 0^n1^n		1
3.	If we select a string w such that w∈L, and w=xyz. Which of the following portions cannot be an empty string?		1
	A. x B. y C. z D. x and z		
4.	∈ - transitions are		
	A. Conditional B. Unconditional C. Input dependent D. Independent		1
5.	RR* can be expressed in which of the forms:		
	A. R^+ B. R- C. $R^+ \cup R^-$ D. R		1

PART – B (4 X 2 = 8 MARKS)
ANSWER ANY TWO QUESTIONS – EACH QUESTION CARRIES FOUR MARKS

6.	Define DFA , explain the Tuples for defining DFA.	4
7.	Construct Regular Expression for set of all strings {0,1} starting and ending with symbol 0	4
8.	Give the Grammar, Language and Computing model for the Type 3 and Type 2 Chomsky Hierarchy	4

PART – C (12 X 1 = 12 MARKS)
ANSWER ALL THE QUESTIONS – EACH QUESTION CARRIES TWELVE MARKS

9.A Convert the following NFA into DFA with proper transition steps **12**

States	Inputs	
	0	1
$\rightarrow p$	$\{p, q\}$	$\{p\}$
q	$\{r\}$	$\{r\}$
r	$\{s\}$	ϕ
$*s$	$\{s\}$	$\{s\}$

OR

9.B Convert the given DFA to Regular Expression using Formula Method **12**