VIGNAN'S Institute of Information Technology (Autonomous)::Visakhapatnam VR20

II B. Tech II Semester Mid-1 Examinations, May - 2022

Course Code: 1005202202 Course Name: Formal Languages and Automata Theory

Branch: CSE Max. Marks :30M Time: 90 min. Date: 11-05-2022

Question Paper Consists of Part – A and Part – B

Answer all questions

Part – A

Q.No.		QUESTIONS	MARKS
1.	a.	Design a DFA which accepts all strings which are ending with 11 over an alphabet $\sum = \{0, 1\}$?	2M
	b.	Differentiate Mealy and Moore machines?	2M
	c.	Construct Regular Expression over $\sum = \{1\}$ having odd length string?	2M

Part – B

Q.No.		QUESTIONS	MARKS
2.	a.	Construct a DFA which accepts $\{a^n b^m / n,m >=1\}$ where 'n' and 'm' are different lengths over $\sum = \{a,b\}$?	5M
	b.	Construct a DFA which accepts all strings over $\sum = \{a, b\}$ in which the number of a's are divisible by '3' and the number of b's divisible by '2'?	5M
3.	a.	Construct a NFA for $\{0101^n U 0100, n\geq 0\}$ over $\sum = \{0,1\}$?	5M
	b.	Design a Moore and Mealy machine for a binary input sequence such that if it is having a substring '101' the machine outputs 'A', if input has substring 110 it outputs 'B' otherwise it outputs 'C'.	5M
4.	a.	Discuss about properties of Regular Expressions?	4M

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