SRM Institute of Science and Technology
College of Engineering and Technology
SCHOOL OF COMPUTING
SRM Nagar, Kattankulathur – 603203, Chengalpattu District, Tamilnadu

Mode of Exam
OFFLINE

Academic Year: 2022-23 (EVEN) SET-B

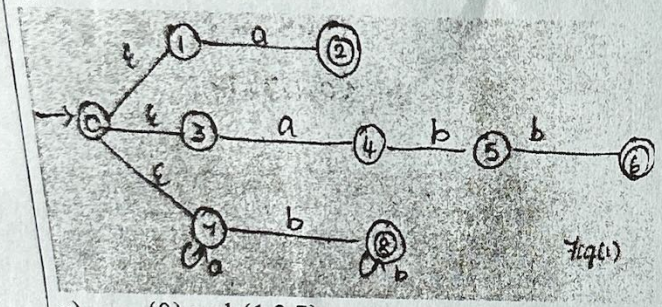
est: CLAT-1
ourse Code & Title: 18CSC304J COMPILER DESIGN
ear & Sem: III & VI

Date: 17.2.2023
Duration: 1 HOUR
Max. Marks: 25

ourse Articulation Matrix:

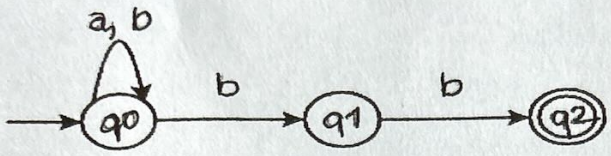
No.	Course Outcome	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	CO1	3	3	3									

Part – A (5 x 1 = 5 Marks) Instructions: Answer all

Q. No	Question	Marks	BL	CO	PO	PI Code
1	In the below Fig what is the epsilon closure of State '0' and '3'  a) {0} and {1,3,7} b) {0,1,3,7} and {3} c) {0,1,3,7} and {3,4} d) {0} and {3,4}	1	2	1	2	2.5.2
2	Lex specification file sections are demarkated by a) % b) {% c) %} d) %%	1	1	1	1	1.6.1

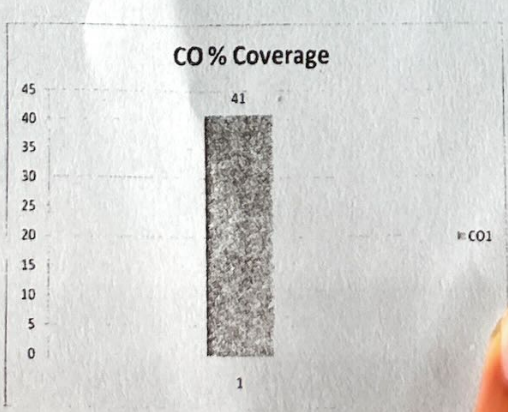
3	Find the number of tokens in the following C code segment is
	Switch(inputvalue)
	{
	Case 1: b=c*d;break;
	Default : b = b++;break:
	}
	a.27
	b.29
	c.26
	d 24
		1	2			1.3

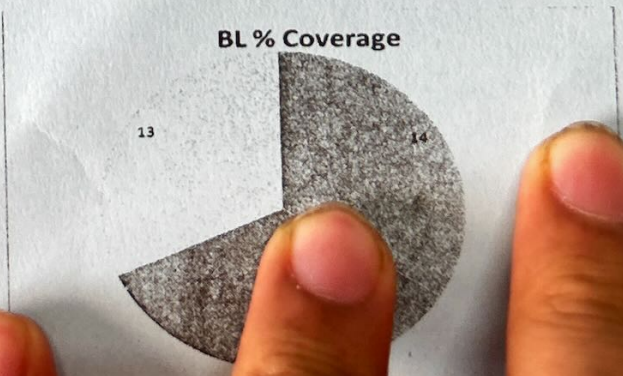
4	Using Thomson's construction method, the Epsilon NFA equivalent of the regular expression ((epsilon/a)b*)* consists of___ number of states. a) 8 b) 9 c) 10 d) 12	1	2	1		1.2.1
5	The input accepted by Deterministic Finite Automata, FA= ({q0, q1, q2}, {a,b}, ð, q0, {q2}) , where ð is given as {(q0,b)=q0, (q0,a)=q1, (q1,a)=q1, (q1,b)=q2, (q2,a)=q1, (q2,b)=q0} is, A. aaabbbab B. ababa C. bbbaaaa D. bbaaabb	1	1	1	1	1.2

	Part – B (4 x 2 = 8 Marks) **Instructions: Answer any TWO**					
6	Convert the following NFA diagram to DFA  	4	2	1	2	2.1.1
7	Construct €-NFA for the given regular expression using Thompson's construction (a*/b*)*	4	3	1	2	2.2.2
8	Write a short note on the Execution of a program	4	2	1	1	1.6.1
	Part – C (1 x 12 = 12 Marks) Instructions: Answer any One					
9	(i) Design DFA with $\sum = \{0, 1\}$ accepts the set of all strings with three consecutive 0's. (ii) Explain the various operations of Regular language. (iii) Explain the machine dependent phases and machine independent phases of a compiler? (4 marks)	4+4+4	1	1	2	2.2.1
	or					
10	A pulmonary embolism is a blood clot that blocks and stops blood flow to an artery in the lung. People with this condition will have one or more clot in their deep vein. Write a RE to identify people with two clot in vein. Here the veins with clot are represented as 'a' and without clot are represented as 'b'. Convert the RE into DFA using direct method. (Formation of tree and Finding firstpos and lastpos, nullable – 4 marks Finding followpos and table - 4 marks Minimized DFA (dtrans and reducing table – 4 marks)	12	3	1	3	3.3.2

***Performance Indicators are available separately for Computer Science and Engineering in AICTE examination reforms policy.**

Course Outcome (CO) and Bloom's level (BL) Coverage in Questions





Approved by the Audit Professor/Course Co