Set A

Compiler Design (SRM Institute of Science and Technology)

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-A

Test: CLAT-1
Course Code & Title: 18CSC304J -COMPILER DESIGN
Year & Sem: III & VI

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

Course Articulation Matrix:

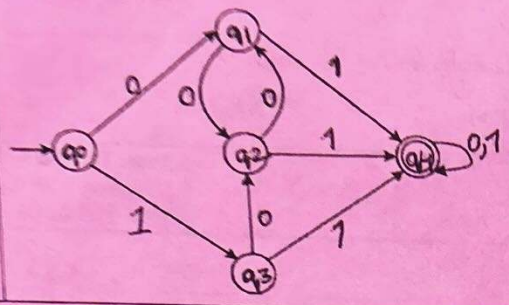
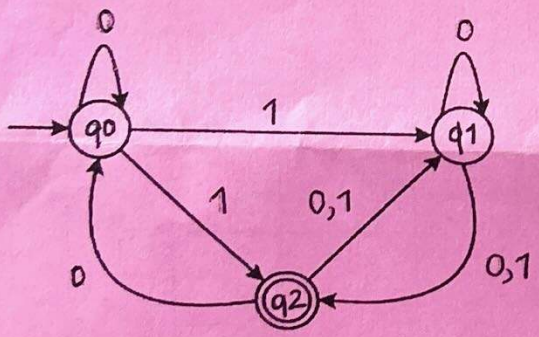
S.No.	Course Outcome	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
1	CO1	3	3	3									

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

Q. No	Question	Marks	BL	CO	PO	PI Code
1	The regular expression (0|1)*(0|1) represents a language with a) Nonempty binary strings b) Empty and nonempty binary strings c) Odd nonempty strings d) Even nonempty strings	1	2	1	1	1.4.1
2	The total number of states to build the given language using DFA: L={w|w has exactly 2 a's and at least 2 b's} a) 10 b) 11 c)12 d)13	1	3	1	2	2.1.3
3	Which of the following is not a regular expression? a) [(a+b)*-(aa+bb)]* b) [(0+1)-(0b+a1)*(a+b)]* c) (01+11+10)* d) (1+2+0)*(1+2)*	1	2	1	2	2.1.2
4	Regular expression Φ* is equivalent to a) ϵ b) Φ c) 0 d) 1	1	1	1	1	1.2.1
5	_____takes collection of rules that define the translation of each operation of the intermediate language into the machine language for the target machine. a. Parser generators b. Scanner generators c. Syntax-directed translation engines d. Automatic code generators	1	1	1	1	1.3.1

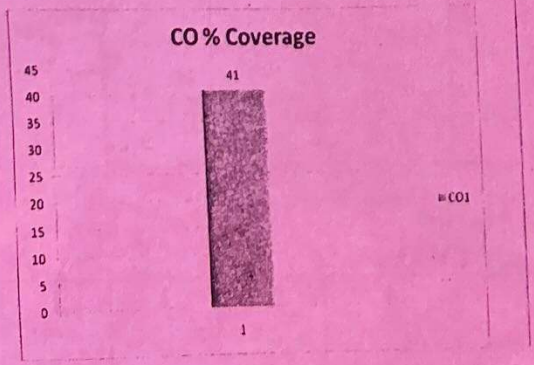
Part – B (2 x 4 = 8 Marks)
Instructions: Answer any TWO

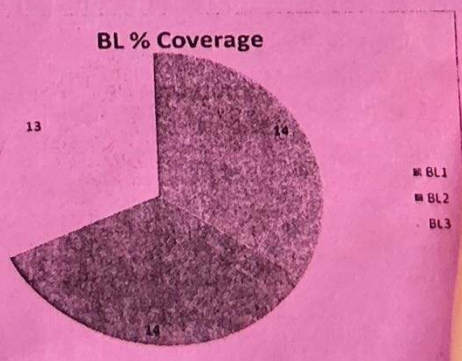
6	The two tests schemes can be reduced to one in input buffering technique? justify your answer with an algorithm.	4	1	1	1	1.3.1
7	Construct a syntax tree with firstpos and lastpos for all nodes of (a|b)*abb.	4	2	1	2	2.3.1

8	Construct the minimal DFA for the below diagram.  	4	3	1	2	2.3.1
	Part – C (1 x 12 = 12 Marks) **Instructions: Answer any ONE**					
9	(i). Consider the input c=a+b*5. With a neat sketch, illustrate how the input is transformed into assembly code, using all the phases of compiler. (Problem solving-4 marks, explanation-4)	8	2	1	2	2.2.1
	(ii). Illustrate LEX code with an example.	4				
	OR					
10	(i). Convert the following Non-Deterministic Finite Automata (NFA) to Deterministic Finite Automata (DFA) using subset construction method.  	8	3	1	3	3.3.2
	(ii). Inference the importance of the compiler construction tools	4				

***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 Coordinator