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SNS College of Technology, Coimbatore-35.

(Autonomous)

B.E/B.Tech- Internal Assessment -II

Academic Year 2023-2024 (ODD)

Fifth Semester

Computer Science and Engineering

19CSB301 – Automata Theory and Compiler Design

B

Time: 1.5 Hours

Maximum Marks: 50

Part-A (5 x 2 =10 marks)

	CO	Bloom s
1. Draw the ϵ -NFA for the regular expression $(0^* 1^*)$	CO2	Rem
2. Construct the Syntax tree for $(a b)^*$ and find the first pos and last pos of operands and operators	CO2	App
3. Eliminate immediate left recursion for the following Grammar E \rightarrow E+T T \rightarrow T*F F \rightarrow (E) id	CO3	App
4. Perform left factoring for the grammar. A \rightarrow qB qC	CO3	APP
5. Write the grammar (CFG) for the regular expression $a^*b^*c^*$	CO3	Rem

Part-B (2x13+14=40 marks)

6. a. Construct the ϵ -NFA to DFA for the given regular expression $(a|b)^*a(a|b)$ using Thompsons & Subset Construction 13 CO2 App
- (or)
- b. Convert the Regular Expression $(a|b)^*abb$ to DFA (Direct Method) 13 CO2 App

7. a. Construct the predictive parsing table for the following grammar and hence check whether the string (a,a) is accepted or not.

$$S \rightarrow (L)|a$$
$$L \rightarrow L,S|S$$

(or)

- b. Construct the CLR parsing table for the following grammar. check whether the string (a) is accepted or not.

CFG $A \rightarrow (A)|a$

8. a. Construct the DFA from the given Regular Expression (a/b)*a (a/b) using Direct Method

(or)

- b. Construct the SLR parsing table for the following grammar and check whether the string “adad” is accepted or not.

$$S \rightarrow CC$$
$$C \rightarrow aC$$
$$C \rightarrow d$$

**Und-Understanding Rem-Remembering App-Aplying
Ana-Analyze Cre-Creating Eva-Evaluating**