SHRIMATHI DEVKUNVAR NANALAL BHATT VAISHNAV COLLEGE FOR WOMEN (AUTONOMOUS)
(Affiliated to the University of Madras and Re-accredited with 'A+' Grade by NAAC)
Chromepet, Chennai — 600 044.
M.Sc. - END SEMESTER EXAMINATIONS APRIL - 2022
SEMESTER - I
20PCSCT1001 - Theory of Computation

Total Duration : 3 Hrs.   **Total Marks : 60**

Section A

Answer any **SIX** questions $(6 \times 5 = 30$ Marks)

1. Explain about Finite Automata.
2. Define Regular Expressions and Regular Grammar.
3. Explain about Pushdown Automata.
4. Explain the different approaches of CFG .
5. Explain about Non-Recursively Enumerable Languages.
6. Explain about Nondeterministic Finite Automata with example.
7. Explain Ambiguity In Grammars and Languages.
8. What are the Closure Properties of Regular Languages?

Section B

Part A

Answer any **TWO** questions $(2 \times 10 = 20$ Marks)

9. Give the minimized DFA for the following expression (a/b)*abb.
10. Consider the following grammar.S->AS|b,A->SA|a Construct the SLR parse table for the grammar. Show the actions of the parser for the input string abab.
11. Explain about Turing Machine Variants.
12. Explain about Post's Correspondence Problem.

Part B

Compulsory question $(1 \times 10 = 10$ Marks)

13. Explain in detail about Parse Trees with Derivation.

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