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 NOVEMBER - 2022
SEMESTER - I
20PCSCT1001 - THEORY OF COMPUTATION

Total Duration : 2 Hrs 30 Mins.   Total Marks : 60

Section A

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

1. Illustrate the role of Automata in computation.

2. Interpret the characteristics of Non-Deterministic Finite Automata(NFA).

3. Outline various applications of Regular Expression.

4. Explain the relationship between Finite Automata and Regular Expression with example.

5. Describe the role of Ambiguity in Grammars And Languages.

6. Write notes on Parse Trees and its importance.

7. Describe the working pattern of any one normal form for CFG with example.

8. Examine the need of Undecidability in languages.

Section B

Part A

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

9. Describe any 3 closure properties of regular languages.

10. Analyse the working principles of Context-Free Grammar (CFG) with example.

11. How subroutine technique used in Turing Machine. Elaborate with example.

12. Demonstrate Post's Correspondence Problem with example.

Part B

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

13. Determine the characteristics of Deterministic Finite Automata with suitable example.

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