Exam. Code : 206702
Subject Code :   4100

M.Sc. Computer Science 2nd Semester

MCS-201 THEORY OF COMPUTATION

Time Allowed—3 Hours]   [Maximum Marks—100

Note :— Attempt **five** questions in all by selecting at least **one** question from each Section. All questions carry equal marks.

SECTION—A

1. Explain normal forms of a CFG.

2. Describe regular expressions.

SECTION—B

3. Design an automata for accepting strings generated over $\Sigma = \{0, 1\}$ and starting with 1 and having 0 at the second position from the beginning.

4. Design a PDA for accepting following language :

    $L = \{ww^T : w \in \{a, b\}^*,$ where $\Sigma = \{a, b\}$ and w^T denotes reverse of $w\}$.

SECTION—C

5. Explain the concept of syntax analysis using any one high level language.

6. What are the formal properties of LL(k) grammars.

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SECTION—D

7. Describe context sensitivity.

8. Describe a rewriting system.