

**Exam. Code : 206702**  
**Subject Code : 4800**

**M.Sc. Computer Science 2<sup>nd</sup> Semester**  
**THEORY OF COMPUTATION**  
**Paper—MCS-201**

Time Allowed—2 Hours] [Maximum Marks—100

**Note** :—There are **EIGHT** questions of equal marks.  
Candidates are required to attempt any  
**FOUR** questions.

1. What are Regular Expressions ? Explain with examples.
2. Explain the steps to show that the CFG's are closed under concatenation.
3. Design a PDA for the following language :  
 $L = \{ww^T a : w \in \{1, 2\}^*, \text{ where } a \text{ is any symbol and } w^T \text{ denotes reverse of } w\}$
4. Design an automata for accepting strings generated over  $\Sigma = \{0, 1\}$  having 0 at the second position from the beginning.
5. Explain the concept of Syntax Analysis.
6. Describe the properties of LR(k) grammars.
7. Explain the rewriting system briefly.
8. Write short notes on Algebraic properties and context sensitivity.

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