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B.Tech. 5th Semester (CSE)
Examination, December-2015
THEORY OF AUTOMATA COMPUTATION
Paper-CSE-305-F

Time allowed : 3 hours] [Maximum marks : 100

Note : The students have to attempt first compulsory question and one question from each of the four units.

1. Explain the following :
 - (i) NDFA
 - (ii) Removal of useless symbols
 - (iii) Turing machine
 - (iv) Computability 20

Unit-I

2. Describe the following :
 - (i) Regular Expressions
 - (ii) Equivalence of Finite Automata and Regular expressions 20
3.
 - (i) Explain the concept of basic machine. Also explain the properties and limitations of FSM. 10
 - (ii) State and Prove Arden's Method. 10

Unit-II

4.
 - (i) Explain in detail about Myhill-Nerode Theorem. 10
 - (ii) Describe the Applications of the Pumping Lemma. 10

5. Explain the following :
- (i) Ambiguity Regular Grammar
 - (ii) Context Free and Context sensitive Grammar.
- 20

Unit-III

6. What is Push down Machines. Explain in detail about Applications of Push down machines. 20
7. What is Turing machine ? Explain the design and Halting Problem of T.M. 20

Unit-IV

8. Explain in detail about Chomsky. Hierarchies of Lemmas in detail, 20
9. What do you mean by computability ? Explain in detail. 20