Roll No. ....

Total Pages : 02

BT-5/D-23

45273

AUTOMATA

PC-CS-AIML-301(a)

Time : Three Hours]

[Maximum Marks : 75

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

Unit I

1. (a) Discuss Deterministic Finite Automata and Non-Deterministic Finite Automata with the help of suitable examples. **10**

   (b) Discuss the applications of Finite Automata. **5**

2. (a) Explain the closer properties of Regular Languages. **8**

   (b) Write a short note on Equivalence and Minimization of NFA and DFA Automata. **7**

Unit II

3. (a) Describe Chomsky Theorem. **10**

   (b) Explain the Applications of Context Free Grammars. **5**

P.T.O.

4. (a) Write a short note on Regular Grammar.   **10**

    (b) Discuss the Applications of Pumping Lemna.   **5**

Unit III

5. Describe in detail Equivalence of Moore and Mealey Machines and its Designing.   **15**

6. (a) Explain Deterministic Push Down Automata.   **10**

    (b) Discuss the applications of PDA.   **5**

Unit IV

7. Describe Universal Turing Machines and Designing of Turing Machines.   **15**

8. (a) Discuss Post's Correspondence Problem (PCP).   **10**

    (b) Write a short note on Rice's Theorem.   **5**