

R07

Code: R7311502

III B. Tech I Semester (R07) Supplementary Examinations, May 2012

AUTOMATA AND COMPILER DESIGN

(Common to IT & CSS)

Time: 3 hours

Max Marks: 80

Answer any FIVE questions
All questions carry equal marks

- 1 (a) Define the terms alphabet, strings and languages. Discuss about operations that can be performed on strings and languages with suitable examples.
(b) Define a DFA. Design a DFA (specify the transition graph and table) for recognizing the floating point constants in C. (Assume no limit on the number of digits in the constant).
- 2 Write short notes on the following:
(a) Error recovery in syntax analysis.
(b) Context free grammars and syntax analysis.
(c) Left factoring and left recursion.
- 3 (a) Explain the general method of bottom up parsing with an example.
(b) Write in detail about the YACC parser generator.
- 4 (a) What do you mean by synthesized attribute and inherited attribute? Give one example for each with detailed description.
(b) Explain about three address code in detail.
- 5 (a) Explain Chomsky hierarchy of languages.
(b) Explain Briefly NP - hard and NP - complete problems.
- 6 (a) What is activation record and activation tree? How these are related with runtime storage organization?
(b) Distinguish stack allocation and heap allocation strategies.
- 7 (a) What is flow-graph? Explain how given program can be converted into flow-graph.
(b) Explain the loop optimization.
- 8 Explain about dynamic programming for code generation algorithm.
