Code: 9A12501

R09

B.Tech IV Year I Semester (R09) Regular & Supplementary Examinations December 2015
AUTOMATA & COMPILER DESIGN
(Electronics & Computer Engineering)

Time: 3 hours   Max. Marks: 70

Answer any FIVE questions
All questions carry equal marks
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1 (a) Define NFA. Design an NFA for recognizing the language generated by the regular expression
        (a + b)*(ab + ba)(a + b)*. Convert it into equivalent DFA.
   (b) Explain how input buffering scheme is used in lexical analysis. How the sentinels can improve
        the performance of input buffer scheme?

2   Construct predictive parse table for the following grammar.
        S → AB   A → aAa / bAb / a / b   B → aB / bB / ε
        Show the moves of the parser for abbbaa.

3   Write short notes on:
   (a) SLR parser Vs CLR parser.
   (b) Parsing ambiguous grammars in YACC.
   (c) Error recovery in LR parsers.

4 (a) Differentiate between quadruples and triples.
   (b) What is a dependency graph? Explain the use of dependency graph in evaluating attributes of a
        grammar symbol with one example.

5 (a) Write notes on Polymorphic functions.
   (b) What are the advantages and disadvantages of structural equivalence? Explain with examples.

6   Write and explain about Symbol Table Organization.

7 (a) What are du and ud- chains? Explain briefly.
   (b) Discuss global optimization techniques.

8   Explain the following:
   (a) Addressing modes.
   (b) Register allocation and assignment.

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