IT-721(N)

B. E. (Seventh Semester) EXAMINATION, Dec, 2014

(Information Technology Engg. Branch)

AutoMata and Compiler Design

(Elective—III)

Time : Three Hours

http://www.rgpvonline.com

Note : Attempt one question from each Unit. All questions carry equal marks.

Unit —I

1. (a) Explain the equivalence of NFA and DFA with suitable example.

(b) Give the minimized DFA for the following expression (a/a)*abb.

2. (a) Explain Ardens theorem?

(b) What is regular expression? State the rules, which define regular expression?

Unit-II

3. What is compiler ? State Various phases of a compiler and explain them in detail.

4. (a) Construct the predictive parser for the following grammer.

S->(L)|a L->L,S|S

Or

4. a) What is FIRST AND FOLLOW? Explain in detail with an example.

b) Explain the role Lexical Analyzer and issues of Lexical Analyzer.

Unit—III

5. (a) Check Whether the following grammer is SLR(1) or not. Explain your answer with reasons.

S->L=R S-> R L-> *R L-> id R->L

(b) For the operators given below, calculate the operator-precedence relations and operator precedence function:

Id,+,*,$

Or

6. a)Construct a canonical parsing table for the grammer given below.

S->CC C->cC|d

(b) What is the three address code? Mention its types . How would you implement the three address statements? Explain with suitable examples.

Unit-IV

7. (a)Discuss about the run time storage management of a code generator. Describe about the stack allocation in memory management.

(b) What are the various data structure used for implementing the symbol table?

8. (a) List the various error recovery strategies for a syntactic analysis.

(b) Explin the various limitations of using static allocation.

Unit—V

9. (a) Explain the principle of source code optimization in detail.

(b) How would you construct a DAG for a Basic Block? Explain with an example.

Or

10 a) Write about Data Flow analysis of structural programs.

b) Draw the DAG for a:=b*-c+b*-c

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