Total No. of Questions : 8] *[Total No. of Printed Pages : 2*

Roll No .....

CS-701

B.E. VII Semester

Examination, December 2016

Compiler Design

Time : Three Hours

Maximum Marks : 70

Note: i) Attempt any five questions.
ii) All questions carry equal marks.

1. a) What are the different phases of compiler? Explain them with help of suitable example. 7
   b) Explain the following term in brief: 7
      i) Input buffering
      ii) Functions of lexical analyzer
2. a) Explain the concept of bootstrapping and porting in relation to compilation. 7
   b) Show whether the following grammar is LL(1) or not
      $E \rightarrow TE + TE/\varepsilon$
      $T \rightarrow FT/*FT/\varepsilon$
      $F \rightarrow (E)/id$
      And explain the model of predictive parser. 7
3. a) Define: Left recursive. State the rule to remove left recursive from the grammar. Eliminate left recursive from following grammar. 7
      $S \rightarrow Aa/b$
      $A \rightarrow Ac/Sd/f$
   b) Explain operator precedence parsing method with example. 7

4. a) Explain the various strategies of symbol table creation and organization. 7
   b) Define syntax directed definition. Explain the various forms of syntax directed definition. 7
5. a) Explain different storage allocation strategies with the help of suitable examples. 7
   b) Write short notes: 7
      i) Type checking
      ii) Register allocation and assignment
6. a) Construct a DAG for the basic block whose code is given below: 7
      D: = B * C
      E: = A + B
      B: = B * C
      A = E – D
   b) Explain quadruple, triple and indirect triple with suitable example. 7
7. a) Design algorithm for global common sub expression elimination. 7
   b) Explain various issues in design of code generator. 7
8. Write short notes (any four) 14
   a) Peephole optimization
   b) Back patching
   c) Loop optimization
   d) Dead code elimination
   e) Syntax trees

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