Code No: B0501

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
M.Tech II Semester Examinations, October/November 2011
COMPILER DESIGN
(COMPUTER SCIENCE)

Time: 3hours   Max. Marks: 60

Answer any five questions
All questions carry equal marks
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1.   Explain about LEX lexical analyzer generator.   [12]

2.a)   Write algorithm for Constructing Predictive Parsing table.
  b)   Construct Predictive Parsing Table for the following grammar(G)   [6+6]
        $E \rightarrow T E^1$
        $E^1 \rightarrow + T E^1 / \epsilon$
        $T \rightarrow F T^1$
        $T^1 \rightarrow * F T^1 / \epsilon$
        $F \rightarrow (E) / id$

3.   Construct Operator Precedence relation matrix for the following operator grammar.
        $S \rightarrow a / \wedge /(T)$
        $T \rightarrow T, S / S$ [12]

4.   Construct LR(1) Parsing table for the following Grammar
        G: $S \rightarrow L=R$
              $S \rightarrow R$
              $L \rightarrow * R$
              $L \rightarrow id$
              $R \rightarrow L$ (Write all necessary procedures)   [12]

5.a)   Convert the Following arithmetic expression into Syntax tree and Three Address Code.
        $h = a + b*c-d*e-f$
  b)   Compare various forms of Three Address Code.   [6+6]

6.a)   Explain the storage Organization.
  b)   Explain the stack allocation strategy with example.   [6+6]

7.   Write about the following Algorithms
        a) Detection of Loop Invariant Computation.
        b) Code Motion.   [6+6]

8.   Explain issues in the design of a code generator.   [12]

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