Code: R7311502

R07

B.Tech III Year I Semester (R07) Supplementary Examinations December 2015

AUTOMATA & COMPILER DESIGN

(Common to IT and CSS)

(For 2008 regular admitted batch only)

Time: 3 hours   Max. Marks: 80

Answer any FIVE questions

All questions carry equal marks

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1 (a) Discuss in detail about the lexical analysis.
  (b) Describe the languages denoted by the following regular expressions in simple words:
      (i) 0(0 + 1)*0   (ii) ((ε + 0)1*)*
      (ii) (0 + 1)$^+$ 0(0+1)(0+1)   (iv) 0*10*10*10*

2 (a) Show that the following grammar ambiguous:
          S → SaS / b
  (b) Explain the purpose of the syntax analysis.
  (c) Write about error recovery in predictive parsing.

3 (a) Distinguish between top down parsing and bottom up parsing. Give one example for each.
  (b) Discuss about the method of resolving ambiguities in YACC with an example.

4   Write three address code for the following program segment.
        while (v2 < v1)
         {   v3 = v3 * v2;   v2 = v2 + 1;   v4 = v4 * v3;
                while (v4 < 20)
                   {   if (v3 < 30) break;
                        v2 = v2 * v4;
                   }
             v1 = v1 + 1;
         }

5 (a) What is the importance of polymorphic functions?
  (b) Write translation scheme for checking polymorphic functions.

6 (a) Explain the storage organization.
  (b) Explain the stack allocation strategy with example.

7 (a) Explain briefly about the global optimization.
  (b) Distinguish machine dependent and machine independent optimization.

8   Explain issues in the design of a code generator.

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