Code: 13A05502

B.Tech III Year I Semester (R13) Supplementary Examinations June 2016
COMPILER DESIGN
(Computer Science & Engineering)

Time: 3 hours   Max. Marks: 70

PART – A
(Compulsory Question)
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1   Answer the following: (10 X 02 = 20 Marks)
   (a)   Define token & pattern of compiler.
   (b)   Define phase and pass.
   (c)   What is YACC stands for? What is its role?
   (d)   What are the error recovery strategies of a parser?
   (e)   Explain syntax directed translation process. What are its applications?
   (f)   Define type checking and type equivalence concept.
   (g)   Define static storage and heap storage.
   (h)   Define symbol table. Write a short note on it.
   (i)   Write short note on any two issues in the design of a code generator.
   (j)   What is the role of peephole optimization in compilation process?

PART – B
(Answer all five units, 5 X 10 = 50 Marks)

UNIT - I

2   (a)   Explain programming language basics.
    (b)   What are compiler constructer tools? Explain.
OR
3   (a)   What is lex tool? Explain use and form of lex program.
    (b)   Explain briefly how to recognize tokens in lexical analysis.

UNIT - II

4   (a)   Explain the process of elimination of left factor from the grammar.
    (b)   Define LL(l) grammar to calculate parsing table for the given grammar.
          S ->iEtSS'/a
          S ->eS/ϵ
          E ->b
OR
5   (a)   Explain the concept of LR parsing algorithm with neat diagram.
    (b)   Explain the concept of ambiguous grammar in syntax analysis.

UNIT - III

6   (a)   How to implement L-attributed SDD?
    (b)   Explain briefly on three address codes.
OR
7   (a)   What is the control flow concept in intermediate code generation phase?
    (b)   What is Backpatching? Explain in detail.

UNIT - IV

8   (a)   Write briefly reference counting garbage collectors.
    (b)   Explain the concept of static VS dynamic storage allocation.
OR
9   (a)   Explain stack allocation of space in runtime environment of a compiler.
    (b)   Explain heap management mechanism.

UNIT - V

10 (a)   Explain peephole optimization.
    (b)   Explain basic concepts of simple code generation.
OR
11 (a)   Explain different issues in the design of a code generator.
    (b)   Explain simple target machine model.