Code: 13A05502 **R13**

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.

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