

COMPILER DESIGN
(Computer Science & Engineering)

Time: 3 hours

Max. Marks: 70

PART – A
(Compulsory Question)

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

PART – B

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

UNIT - I

- Explain programming language basics.
 - What are compiler constructor tools? Explain.
- OR**

 - What is lex tool? Explain use and form of lex program.
 - Explain briefly how to recognize tokens in lexical analysis.

UNIT - II

- Explain the process of elimination of left factor from the grammar.
 - Define LL(I) grammar to calculate parsing table for the given grammar.
 $S \rightarrow iEtSS'a$
 $S \rightarrow eS/\epsilon$
 $E \rightarrow b$

OR

- Explain the concept of LR parsing algorithm with neat diagram.
 - Explain the concept of ambiguous grammar in syntax analysis.

UNIT - III

- How to implement L-attributed SDD?
 - Explain briefly on three address codes.

OR

- What is the control flow concept in intermediate code generation phase?
 - What is Backpatching? Explain in detail.

UNIT - IV

- Write briefly reference counting garbage collectors.
 - Explain the concept of static VS dynamic storage allocation.

OR

- Explain stack allocation of space in runtime environment of a compiler.
 - Explain heap management mechanism.

UNIT - V

- Explain peephole optimization.
 - Explain basic concepts of simple code generation.

OR

- Explain different issues in the design of a code generator.
 - Explain simple target machine model.
