

B.Tech III Year I Semester (R13) Regular Examinations December 2015

COMPILER DESIGN

(Computer Science and Engineering)

Time: 3 hours

Max. Marks: 70

PART – A

(Compulsory Question)

- 1 Answer the following: (10 X 02 = 20 Marks)
- (a) List the two types of assemblers
 - (b) Give the four levels of Chomsky Hierarchy for Formal Languages.
 - (c) Formally define CFG.
 - (d) Explain in brief about Role of Parser.
 - (e) Discuss the types of Intermediate Code.
 - (f) List the five categories of representation of Three address statements.
 - (g) What are the typical places where optimization techniques can be implemented?
 - (h) Illustrate the principal sources of optimization techniques.
 - (i) What are the possible transformations that are applied to peephole optimization?
 - (j) Pick the odd one out:
 - (i) DAG should have directed edges
 - (ii) Nodes in DAG can have multiple predecessors
 - (iii) A node in a path in a DAG may repeat
 - (iv) Nodes in DAG can have multiple successors.

PART – B

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

UNIT – I

- 2 Explain the different stages of compiler design.
- OR**
- 3 Give an algorithm to convert regular expression to epsilon NFA.

UNIT – II

- 4 Describe the steps for Predictive Parser.
- OR**
- 5 Discuss the limitations of top-down parser.

UNIT – III

- 6 Describe Polish Notation with an example.
- OR**
- 7 Explain the process of generating three address codes.

UNIT – IV

- 8 Describe the process of Dead Code Elimination.
- OR**
- 9 Explain Loop-invariant computations.

UNIT – V

- 10 Describe the various types of machine architectures.
- OR**
- 11 Give the directed acyclic Graph Representation of Basic Blocks.
