R13

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)
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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.

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