JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech III Year II Semester Examinations, June - 2022
COMPILER DESIGN
(Computer Science and Engineering)

Time: 3 hours   Max. Marks: 75

Answer any five questions
All questions carry equal marks
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1.a)   Write a LEX program that recognizes the tokens.
  b)   With the help of neat sketch, explain bootstrapping of a compiler.   [7+8]

2.a)   With a neat sketch explain the structure of the non-recursive predictive parser. How can we handle errors in it?
  b)   Explain the process of error recovery in predictive parsing.   [8+7]

3.a)   Prove that Bottom-up parsing is right most derivation in reverse order.
  b)   What are the common conflicts that can be encountered in shift-reduce parsers? Explain.   [7+8]

4.a)   Define an Intermediate code generator. Explain in brief about different forms of Intermediate code generation.
  b)   Give brief description about Type checking and Type Conversion.   [8+7]

5.a)   Define the Symbol table. Explain the data structures used in it.
  b)   Explain in brief about Stack Storage allocation strategy.   [7+8]

6.a)   Explain with suitable examples various sources of loop optimization.
  b)   What is the purpose of code optimization? Explain in detail.   [8+7]

7.a)   With the help of suitable example, explain reducible and non-reducible flow graphs.
  b)   What is a leader of the basic block? Write and explain the algorithm used to find leaders.   [7+8]

8.a)   What is machine-dependent optimization? Explain how peephole techniques functions in this?
  b)   Explain about assignment of generic code generation algorithms in detail.   [8+7]

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