JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech III Year II Semester Examinations, November/December - 2020
COMPILER DESIGN
(Computer Science and Engineering)

Time: 2 hours   Max. Marks: 75

Answer any five questions
All questions carry equal marks
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1.a)   Differentiate between a Compiler and an Interpreter.
  b)   Explain the various phases of a compiler briefly.
  c)   What is bootstrapping process? Discuss.   [4+6+5]

2.a)   Discuss about the general strategies that a parser can employ to recover from a syntactic error.
  b)   Eliminate the left-recursion from the following grammar:
            S → (L) | a
            L → L,S | S
        Determine whether a predictive parser can be constructed for this grammar or not.
                                                                              [7+8]

3.   Construct the SLR Parsing table for the following grammar: [15]
            E → E + T | T
            T → T * F | F
            F → (E)/id

4.a)   What is attributed grammar? Discuss about L – attributed and S – attributed grammars.
  b)   Construct the syntax-directed definition to produce a syntax trees for assignment statements.   [7+8]

5.   Explain various storage allocation strategies and list out their merits and demerits.   [15]

6.   What is the scope of optimization in language processing? Explain in detail about frequency reduction and constant folding optimization techniques.   [15]

7.   Explain in detail about redundant sub expression elimination and induction variable elimination method.   [15]

8.a)   What are the application of DAG?
  b)   Explain in detail about register allocation and assignment.   [6+9]

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