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SIXTH SEMESTER **B. Tech.**

SUPPLEMENTARY EXAMINATION **Sept-*2019***

SE-306 COMPILER DESIGN

Time: 3 Hours *Max. Marks: 50*

Note: Attempt any five questions. Assume suitable missing data, if any.

Q.1 (A) What is a compiler? Explain the various phases of compiler in detail, with a neat sketch. [7]

(B) Define tokens, Patterns and lexemes with examples. [3]

Q.2 (A) What is ambiguous grammar? Explain with suitable example. [3]

(B) Differentiate between LR and LL Parsers. [2]

(C) Check whether the given grammar G: S→ 1AB|ϵ A→1AC|0C B→ 0S C→1 is LL (1) or not? [5]

Q.3 (A) With neat sketch explain the structure of LR parser and the rules to compute LR item. [4]

(B) Differentiate synthesized and inherited attributes with example. [3]

(C) Differentiate NFA and DFA with example. [3]

Q.4 (A) Construct the syntax tree and draw the DAG for the expression (a*b) + (c-d) * (a*b) + b. [3]

(B) Write the rule to find the first and follow function, explain with suitable example. [3]

(c) Construct Right most derivation for the grammar

E→E+T/T,

T→T*F/F,

F→ (E)/id

For given string w= id+id*id [4]

Q.5 (A) Define Symbol table. Explain about the data structures for Symbol table. [3]

(B) What is intermediate code? Write the quadruple, triple, indirect triple for the expression:

(a*b) + (c+d)-(a+b+c+d) [4]

(C) What are the advantages of heap storage allocation? [3]

Q.6 (A) Can we reuse the symbol table space? Explain through an example. [2]

(B) Explain the error occurred in various phases of compiler. How to handle them? [4]

(C) What you understand by the code optimization? Explain the loop optimization techniques. [4]