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School of Computing Science and Engineering

Bachelor of Technology in Computer Science and Engineering

Mid Term Examination - May 2024

Duration : 90 Minutes

Max Marks : 50

Sem VI - R1UC603C - Compiler Design

General Instructions

Answer to the specific question asked

Draw neat, labelled diagrams wherever necessary

Approved data hand books are allowed subject to verification by the Invigilator

- 1) Compare tokens, patterns and lexeme with example. K2 (2)
- 2) Explain lexical analysis and syntax analysis phases in compiler with example. K1 (3)
- 3) Distinguish between the ambiguous grammar and unambiguous grammar. Show all the steps through a suitable string. K2 (4)
- 4) Summarise the following: (i) Preprocessor (ii) Assembler Loader and (iii) Linker with proper examples. K2 (6)
- 5) Summarize the importance of symbol table and show through a proper diagram. K3 (6)
- 6) Demonstrate all the six phases of a compiler in detail with reference to accept a new self designed grammar. K3 (9)
- 7) Eliminate left recursion from the following grammar: $E \rightarrow E + T \mid T T$
 $\rightarrow T * F \mid F F \rightarrow (E) \mid id$ K4 (8)
- 8) Explain the LL(1) parsing. Test the following grammar for LL(1) by constructing the parse tree: $S \rightarrow (L) \mid a L \rightarrow L, S / S$ K4 (12)

OR

Design the parse tree for a context free grammar(G) where production rules are as follows: $S \rightarrow aB \mid bA$ $A \rightarrow a \mid aS \mid bAA$ $B \rightarrow b \mid bS \mid aBB$ for the input string "aaabbabbba" using left most derivation and right most derivation. K4 (12)