Total No. of Questions: 05

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Roll No._____

BTCSCS302

V Semester Examination, December - 2022

B.Tech. (CSBS-TCS)

Compiler Design

Choice Based Credit System (CBCS)

Time: 3 Hrs. **Maximum Marks: 60**

Minimum Pass Marks: 24

Note: *All questions carry equal marks, out of which part'A' and 'B' carry 3 marks and part 'C' carries 6 marks. From each question, part 'A' and 'B' are compulsory and part 'C' has internal choice. Draw neat diagram, wherever necessary. Assume suitable data wherever necessary.*

Q.1(A) Differentiate compiler and interpreter. **03**

(B) Define (i) LEX (ii) Token **03**

(C) Explain the various phases of compiler in detail, with a neat sketch. **06**

OR

What is meant by input Buffering? Explain the use of sentinels in recognizing tokens.

Q.2(A) List the cousins of compiler and explain the role of any one of them. **03**

(B) Calculate the first and follow functions for the given grammar-

$S \rightarrow aBDh$, $B \rightarrow cC$, $C \rightarrow bC / \in$, $D \rightarrow EF$, $E \rightarrow g / \in$, $F \rightarrow f / \in$ **03**

(C) Check whether the following grammar is SLR(1) or not.

$S \rightarrow L=R$, $S \rightarrow R$, $L \rightarrow *R$, $L \rightarrow id$, $R \rightarrow L$ **06**

OR

Explain left recursion and left factoring with suitable example?

Q.3(A) What are S-attribute and L-attribute definitions? **03**

(B) What is intermediate code generation? Explain. **03**

(C) Explain symbol table with its uses in compilers? **06**

OR

What is Syntax directed translations? Also explains its rules.

Q.4(A) Write about data flow analysis of structural program with suitable example. **03**

(B) Describe activation tree. **03**

Contd...

(C) What is the purpose of loop optimization? Explain in detail loop optimization with example. **06**

OR

Explain quadruples, triples, and dags with an example each.

Q.5(A) Explain the different storage allocation strategies. **03**

(B) Discuss the concept of dead code elimination. **03**

(C) What do you mean by Peephole Optimization techniques. **06**

OR

Explain global data flow analysis.

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