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Total No. of Pages : 02

Total No. of Questions : 09

B.Tech. (CSE) (Sem.-6)

COMPILER DESIGN

Subject Code : BTCS601-18

M.Code : 79249

Date of Examination : 18-12-2023

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. **SECTION-A is COMPULSORY** consisting of TEN questions carrying TWO marks each.
2. **SECTION-B** contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. **SECTION-C** contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION-A

1. **Attempt the following:**

- a) List the cousins of the compiler.
- b) What is DAG?
- c) Differentiate between parse tree and syntax tree.
- d) Comparison between call by value and call by reference.
- e) Describe the term Environments and States.
- f) Differentiate between token and lexeme.
- g) What is a symbol table? Where is it used in the compiler?
- h) What is shift-reduce conflict? Give one example.
- i) What is the role of Lexical Analyzer?
- j) What is back patching?

SECTION-B

2. Discuss peephole optimization with an example.
3. Explain three address code quadruples and triples with an example.
4. Explain shift-reduce parsing with the help of an example?
5. Remove ambiguity from, given grammar:

$$E \rightarrow E+E \mid E-E \mid E/E \mid E * E \mid (E) \mid -E \mid id$$

6. How syntax-directed scheme is implemented, discuss with an example?

SECTION-C

7. Explain the phases of the compiler in detail with an example?
8. Discuss the optimization of Loops with examples.
9. Test whether the given grammar is LL1 or not and construct a predictive parsing table for it:

$$S \rightarrow iCtSS' \mid a$$

$$S \rightarrow eS \mid \epsilon$$

$$C \rightarrow b$$

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.