

**APRIL 2023**

**57707/CS32A**

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Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer any TEN questions.

1. Define tokens, patterns and lexemes.
2. State the issues in a lexical analyzer.
3. List the concepts of Predictive parsing and shift reduce parsing.
4. Difference between ambiguous and unambiguous grammar.
5. Define type systems.
6. Write the three address code sequence for the assignment statement.  $d = (a-b) + (a-c) + (a-c)$
7. What is heap allocation?
8. Define variable data length on the stack.
9. List out the properties of optimizing compilers.
10. What is DAG? Point out advantages of DAG.

11. Write the Algebraic properties of Regular expression?
12. How to create an input and output translator with YACC?

PART B — (5 × 5 = 25 marks)

Answer any FIVE questions.

13. Give the structure of a compiler.
14. Explain left recursion and Left Factoring.
15. Compare three address code for expression with the Incremental translation
16. Differentiate static versus dynamic memory allocation.
17. Describe the efficient data flow algorithms in detail.
18. Explain the Error recovery techniques used in Predictive parsing?
19. What is 'Type conversion? What are the two types of type conversion? Evaluate the rules for the type conversion.

PART C — (4 × 10 = 40 marks)

Answer any FOUR questions.

20. Describe the various phases of compiler with suitable example.
  21. Explain the various types of Top – down parsing.
  22. Discuss in detail about Dependency graph.
  23. Elaborate on the activation tree and activation record with suitable example.
  24. Give an overview on
    - (a) Semantic preserving transformation
    - (b) Global Common subexpression
  25. Differentiate Deterministic Finite Automata and Non- Deterministic Finite Automata with examples.
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