

NOVEMBER 2023

**57707/CS32A/
436E1D**

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer any TEN questions.

1. What is Compiler?
2. Define Regular expressions.
3. What is an LALR(1) grammar?
4. Write the rules to construct the SLR parsing table.
5. Define annotated parse tree.
6. List down the types of Three Address Code.
7. How to access Non-local data on the stack?
8. Write a short note on Head Management.
9. Give the applications of DAG.
10. Write the role of peephole optimization in compilation process
11. List the various phases of a compiler.
12. Mention the Problems in Top Down Parsing.

PART B — (5 × 5 = 25 marks)

Answer any FIVE questions.

13. Write short notes on specification of Tokens.
14. Perform Shift Reduce Parsing for the following
 - (a) $S \rightarrow (L) \mid a$
 $L \rightarrow L, S \mid S$ input string:(a,(a,a))
 - (b) $E \rightarrow E + E \mid E * E \mid (E) \mid id$ input string (id*id+id)
15. Describe the Evaluation orders for Syntax Directed Definition with an example.
16. Draw the format of Activation Record in stack allocation and explain each field in it.
17. Summarize on Global data flow analysis.
18. Explain Input Buffering with simple examples?
19. Write about all issues in Code Generation. Describe it.

PART C — (4 × 10 = 40 marks)

Answer any FOUR questions.

20. How to design the compiler by using the source program position: = initial + rate*60.
21. Explain the usage of YACC parser generator in construction of a Parser.

22. Discuss on Type Checking with suitable examples.
23. Summarize on Storage allocation strategies with examples.
24. Construct the DAG for following statement.
 $a+b*c+d+b*c$
25. Construct the LR(0) items for the following Grammar

$S \rightarrow L = R$

$S \rightarrow R$

$L \rightarrow *R$

$L \rightarrow id$

$R \rightarrow L$
