Reg. No. : ....

Code No. : 8059   **Sub. Code : BCAM 33**

M.C.A. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2021

Third Semester

Computer Applications — Core

PRINCIPLES OF COMPILER DESIGN

(For those who joined in July 2020 onwards)

Time : Three hours   Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answers :

1. ———— or scanning is the process where the stream of characters making up the source program is read from left to right and grouped into tokens.

    (a) Lexical   (b) Diversion

    (c) Modeling   (d) Class

2. The table crated by lexical analysis to describe all literals used in the source program is —————

   (a) Terminal table   (b) Literal table

   (c) Identifier table   (d) Reductions

3. A bottom up parser generates —————

   (a) Right most derivation

   (b) Rightmost derivation in reverse

   (c) Leftmost derivation

   (d) Left most derivation in reverse

4. A grammar that produces more than one parse tree for some sentence is called —————

   (a) Ambiguous   (b) Unambiguous

   (c) Regular   (d) Irregular

5. The linker —————

   (a) Is similar to interpreter

   (b) Uses source code as its input

   (c) In required to create a load module

   (d) Reset module

6. Which of these is also known as look-head LR parser?

   (a) SLR   (b) LR

   (c) LLR   (d) VLR

7. The method which merges the bodies of two loops is ————

   (a) Loop rolling

   (b) Loop jamming

   (c) Constant folding

   (d) Constant jamming

8. Which table is a permanent database that has an entry for each terminal symbol?

   (a) Terminal table   (b) Literal table

   (c) Identifier table   (d) Constant table

9. Which loader function is accomplished by loader?

   (a) Reallocation   (b) Allocation

   (c) Linking   (d) Loading

10. Which of the following is used for grouping of characters into tokens?

   (a) Parser

   (b) Code optimization

   (c) Code generator

   (d) Lexical analyzer

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b)
Each answer should not exceed 250 words.

11. (a) What is the usage of syntax directed translation? Describe.

Or

(b) Describe the capabilities of a symbol table.

12. (a) Write down the simple approach to the design of lexical analyzer.

Or

(b) Elaborate the concept of lexical phase errors.

13. (a) Define the term "Parser". What are the two types of parsers?

Or

(b) Summarize the formal definition of a context-free grammar.

14. (a) Mention the applications of syntax-directed translation.

Or

(b) Explain the evaluation orders for SDD's.

15. (a) Describe the issues in the design of code generator.

    Or

    (b) Write an algorithm for code generation and explain it.

    PART C — (5 × 8 = 40 marks)

    Answer ALL questions, choosing either (a) or (b)
    Each answer should not exceed 600 words.

16. (a) Illustrate the concept of lexical analysis and parsing.

    Or

    (b) Outline the science of building a compiler.

17. (a) Explain about the optimization of DFA.

    Or

    (b) How will you recognize tokens? Give example.

18. (a) Discuss the LR-Parsing algorithm with example.

    Or

    (b) What is top-down parsing? Explain.

19. (a) Elaborate the syntax-directed translation scheme for assignment statement.

Or

(b) Construct three address code for the following : position : = initial + rate * 60.

20. (a) How the reducible flow graphs work?

Or

(b) Discuss the implementation of a stack allocation of space.

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