Code No. : 8070   Sub. Code : ZCAM 33

M.C.A. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2023.

Third Semester

Computer Application — Core

PRINCIPLES OF COMPILER DESIGN

(For those who joined in July 2021-2022)

Time : Three hours   Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. The output of lexical analyser is
   (a) Set of regular expression
   (b) Set of tokens
   (c) Syntax tree
   (d) Strings of characters

2. Symbol table can be used for
   (a) Checking type compatibility
   (b) Storage allocation
   (c) Suppressing duplication of error message
   (d) All the above

3. Which of the following parser is most powerful?
   (a) Operator-precedence
   (b) Canonical LR
   (c) LALR
   (d) SLR

4. Semantic errors are occurred during
   (a) compile time   (b) run time
   (c) both (a) and (b)   (d) none of the above

5. ———— grammar are known as context sensitive grammars.
   (a) Type 0   (b) Type 1
   (c) Type 3   (d) Type 2

6. Left factoring is the process of factoring
   (a) prefixed of alternates
   (b) suffixes of alternates
   (c) predictive parsing
   (d) none of these

7. The method which merges the bodies of two loops is
   (a) loop unrolling   (b) loop jamming
   (c) constant folding   (d) none of these

8. Loop is a collection of nodes that is
   (a) strongly connected
   (b) loosely connected and has unique entry
   (c) strongly connected and has a unique entry
   (d) none of these

9. The graph that shows basic blocks and their successor relationship is called
   (a) DAG   (b) Flow graph
   (c) Control graph   (d) Hamiltonion graph

10. ———— is a last phase of compiler design.
    (a) optimization   (b) parse
    (c) analyser   (d) code generation

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Explain the need of symbol table.
    Or
    (b) Write in brief about the functions of preprocessor.

12. (a) Explain in detail about input buffering.
    Or
    (b) Discuss the issues of lexical analyser.

13. (a) Explain Top-Down Parsing.
    Or
    (b) Write a note on ambiguous grammers.

14. (a) Explain about parameter passing.
    Or
    (b) Write about Quadruple and Triple with its structure.

15. (a) Explain the issues of code generator.
    Or
    (b) Mention the techniques used for loop optimization.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Explain about the structure of a compiler.

Or

(b) Describe about syntax-Directed Translation.

17. (a) Construct the DFA for the regular expression(a | b)*aab.

Or

(b) Explain about specification of tokens.

18. (a) What do you meant by recursive decent parsing?

Or

(b) Discuss in detail about LR parsing.

19. (a) What is the use of run-time environment? Explain.

Or

(b) What is intermediate code generation? What are the different types of three address code?

20. (a) Explain various code optimization techniques in details.

Or

(b) Explain Basic blocks and flow graphs in detail.

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