

(6 pages)

Reg. No. :

Code No. : 7070

Sub. Code : ZCAM 33

M.C.A. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2022.

Third Semester

Computer Application – Core

PRINCIPLES OF COMPILER DESIGN

(For those who joined in July 2021)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. _____ read the input characters and produce as output token.
- (a) Lexical Analyzer (b) Syntax analyzer
(c) Code optimization (d) None of these

2. Compiler can diagnose
- (a) Grammatical errors only
(b) Logical errors only
(c) Grammatical as well as logical errors
(d) Neither grammatical nor logical errors
3. Type three Grammar is _____.
(a) Context free grammar
(b) Context sensitive grammar
(c) Regular grammar
(d) None of the above
4. _____ Grammar are known as context sensitive grammars.
(a) Type 0 (b) Type 1
(c) Type 3 (d) Type 2
5. Recursive descent parser is _____.
(a) Top down parser
(b) Bottom up parser
(c) Top and bottom up parser
(d) None of these

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6. Left factoring is the process of factoring _____.

- (a) Prefixed of alternates
- (b) Suffixes of alternates
- (c) Predictive parsing
- (d) None of these

7. DAG means

- (a) Directed Acyclic Graph
- (b) Directed Asynchronous Graph
- (c) Directed Asymmetric Graph
- (d) Directed Address Graph

8. Information needed by a single execution of a procedure is managed using a contiguous block of storage called as _____.

- (a) Activation record
- (b) Frame
- (c) Both (a) and (b)
- (d) None

9. The graph that shows basic blocks and their successor relationship is called _____.

- (a) DAG
- (b) Flow graph
- (c) Control graph
- (d) Hamiltonion graph

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10. A graph representation of three address statements called _____.

- (a) Basic blocks
- (b) Flow graph
- (c) Both (a) and (b)
- (d) None

PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words.

11. (a) Define Translator. Write the types of translator.

Or

(b) What is symbol table? Write the uses of it.

12. (a) Define token. Discuss it.

Or

(b) Write the rules that define regular expression.

13. (a) Differentiate Deterministic and Non-Deterministic finite automata.

Or

(b) What are quadruples? Give example.

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[P.T.O]



14. (a) What are the applications of syntax directed translation?

Or

- (b) Define three address code. How three address code are implemented.

15. (a) Write about stack allocation of space.

Or

- (b) What is basic block? Write the algorithm of partitioning into basic blocks.

PART C — (5 × 8 = 40 marks)

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

16. (a) Discuss the structure of compiler with diagram.

Or

- (b) Explain Push Down Automata with its working principle.

17. (a) Construct the DFA for the regular expression $(a + b)^*aab$.

Or

- (b) Explain about the principal sources of optimization.

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18. (a) Write LR parsing algorithm. Discuss it.

Or

- (b) Explain about the types of grammars. Give example.

19. (a) Describe about Syntax Directed Translation.

Or

- (b) How to implement of three address statement?

20. (a) Discuss about the issues related to the design of code generator,

Or

- (b) How to optimize the basic blocks with flow graphs?

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