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Question Paper Code : 20873

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2023.

Fifth Semester

Computer Science and Engineering

CS 3501 — COMPILER DESIGN

(Regulations 2021)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Define compiler.
2. What is finite automata?
3. What are the goals of error handler in a parser?
4. Define a parse tree.
5. What is meant by Back patching?
6. What is meant by Type Checking?
7. Define symbol table.
8. What is a flow graph? Give example.
9. What is DAG? Give example.
10. What is basic block?

PART B — (5 × 13 = 65 marks)

11. (a) What are the phases of the compiler? Explain each phase in detail. (13)

Or

- (b) Briefly discuss about Role of Lexical Analyzer. (13)

12. (a) Briefly discuss about Design of a syntax Analyzer for a sample language. (13)

Or

- (b) Explain the LR parsing algorithm with an example. (13)

13. (a) Explain in detail about Design of predictive translator. (13)

Or

- (b) Discuss the address code and its implementation, with example. (13)

14. (a) Discuss about the run time storage management of a code generator in detail. (13)

Or

- (b) What are the issues in the design of the code generator? Explain in detail. (13)

15. (a) Explain the principle sources of code optimization in detail. (13)

Or

- (b) Discuss the DAG representation of the basic block with an example. (13)

PART C — (1 × 15 = 15 marks)

16. (a) How the context free grammar will work and compare various parser techniques performance using various code blocks? (15)

Or

- (b) How the data flow optimization can be done and compare the features? (15)