Reg. No. : ☐☐☐☐☐☐☐☐☐☐☐☐☐

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)