Question Paper Code	12248

B.E. / B.Tech. - DEGREE EXAMINATIONS, NOV / DEC 2023
Sixth Semester
Computer Science and Engineering
CS8602 – COMPILER DESIGN
(Regulations 2017)

Duration: 3 Hours   Max. Marks: 100

PART - A (10 × 2 = 20 Marks)
Answer ALL Questions

Marks, K-Level,CO

1. List out the phases of a compiler. — *2,K1,CO1*

2. Describe the two parts of a compilation. — *2,K2,CO1*

3. Define buffer pair. Why is buffering used in lexical analysis? — *2,K1,CO2*

4. Define tokens, patterns and lexemes. — *2,K1,CO2*

5. Define parse tree. — *2,K1,CO3*

6. Define an ambiguous grammar. — *2,K1,CO3*

7. Define Type checker. — *2,K1,CO4*

8. Write the three address code sequence for the assignment statement. d=(a-b)+(a-c)+(a-c). — *2,K1,CO4*

9. Define basic blocks. — *2,K1,CO5*

10. List the fields of activation record. — *2,K1,CO5*

PART - B (5 × 13 = 65 Marks)
Answer ALL Questions

11. a) Describe the various phases of compiler and trace it with the program segment i=i*70+j+2. — *13,K2,CO1*

    OR

    b) (i) Discuss the following terms: Compiler, Interpreter and Translator and differentiate between them. — *6,K2,CO1*
    (ii) Explain complier construction tools. — *7,K2,CO1*

12. a) Discuss in detail about the role of Lexical analyzer with the possible error recovery schemes. — *13,K2,CO2*

    OR

    b) Define Lex and Lex specifications. Explain how lexical analyzer is constructed using lex? Give an example. — *13,K2,CO2*

K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create   **12248**

13. a) Interpret an SLR Parsing table for the following given Grammar. *13,K2,CO3*
    E-> E+T / T
     T-> T*F / F
    F->(E)
    F->a
    Parse the String a+a*a using the table constructed.

OR

   b) (i) Explain the error recovery strategies in syntax analysis. *6,K2,CO3*
      (ii) Describe the conflicts that may occur during shift reduce parsing. *7,K2,CO3*

14. a) Explain in detail about Backpatching Technique. *13,K2,CO4*

OR

   b) Describe the various methods of implementing three-address statements. *13,K2,CO4*

15. a) Discuss the various storage allocation strategies in detail. *13,K2,CO5*

OR

   b) Explain in detail about the translation of source language details into run time environment. *13,K2,CO5*

PART - C (1 × 15 = 15 Marks)

16. a) Explain briefly about the principal sources of optimization *15,K2,CO6*

OR

   b) (i) Describe the efficient data flow algorithms in detail. *8,K2,CO6*
      (ii) Describe in detail about control flow analysis. *7,K2,CO6*