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Reg. No.												

Question Paper Code	11887

B.E. / B.Tech. - DEGREE EXAMINATIONS, APRIL / MAY 2023

Fifth Semester

Computer Science and Business Systems

20CBPC501 – COMPILER DESIGN

(Regulations 2020)

Duration: 3 Hours | Max. Marks: 100

PART - A (10 × 2 = 20 Marks)

Answer ALL Questions

		Marks, K-Level, CO
1.	What are the operations on language?	*2,K1,CO1*
2.	List out compiler construction tools.	*2,K1,CO1*
3.	Define Left Recursion.	*2,K1,CO2*
4.	Recognize Rightmost derivation for E -> E + E | E * E | id.	*2,K1,CO2*
5.	Define Procedure Activation.	*2,K1,CO3*
6.	Show syntax tree for the expression a = b * - c + b * - c.	*2,K2,CO3*
7.	Define Quadruple. Give an example.	*2,K1,CO4*
8.	Translate the arithmetic expression a*-(b+c) into syntax tree and postfix notation.	*2,K2,CO4*
9.	Define Register allocation.	*2,K1,CO5*
10.	List out the types of loop optimizations for cache memory.	*2,K1,CO5*

PART - B (5 × 13 = 65 Marks)

Answer ALL Questions

11. a) (i) Show NFA for the transition table as given below: *7,K2,CO1*

Present State	0	1
→q0	q0, q1	q0, q2
q1	q3	ε
q2	q2, q3	q3
→q3	q3	q3

(ii) Show NFA with $\sum = \{0, 1\}$ accepts all string ending with 01. *6,K2,CO1*

OR

b) Explain regular expression with example. *13,K2,CO1*

12. a) Explain CFG with derivations. *13,K2,CO2*

OR

b) Explain LALR (1) parser generator using yacc and bison. *13,K2,CO2*

13. a) Relate postfix translations schemes and parser – stack implementation of postfix SDT's. *13,K2,CO3*

OR

b) Discuss in detail about S-Attributed definitions and L- Attributed definitions. *13,K2,CO3*

14. a) Explain different types of intermediate form with examples. *13,K2,CO4*

OR

b) Compare the basic terminologies of data flow analysis in code improvement. *13,K2,CO4*

15. a) Summarize the static checks of code generation which include type systems. *13,K2,CO5*

OR

b) Examine the stages for target code generation. *13,K2,CO5*

PART - C (1 × 15 = 15 Marks)

16. a) Construct SLR(1) for the following grammar *15,K3,CO2*
E-->E+T/T , T-->TF/F , F-->F*/a/b.
Show the acceptance for the string w=a+b*a.

OR

b) Illustrate the ways to implement symbol table with the following operations: *15,K3,CO3*
(i) insert()
(ii) lookup()