Reg. No.												

Question Paper Code	12661

B.E. / B.Tech. - DEGREE EXAMINATIONS, APRIL / MAY 2024

Sixth Semester

Computer Science and Engineering

20CSPC602 - COMPILER DESIGN

Regulations - 2020

Duration: 3 Hours | Max. Marks: 100

PART - A (10 × 2 = 20 Marks)

Answer ALL Questions

		Marks	K – Level	CO
1.	Mention the use of a translator.	2	K1	CO1
2.	Draw a Language processing system.	2	K2	CO1
3.	Differentiate bottom up and top down parsing.	2	K2	CO3
4.	Identify the applications of Context free Grammar.	2	K2	CO3
5.	Write the differences between quadruples and Triples.	2	K2	CO4
6.	Define type conversion.	2	K1	CO4
7.	List the contents of a symbol table.	2	K1	CO5
8.	Give an example of a DAG.	2	K1	CO5
9.	Identify the need for optimization.	2	K2	CO6
10.	Define a basic block.	2	K1	CO6

PART - B (5 × 13 = 65 Marks)

Answer ALL Questions

			Marks	K – Level	CO
11.	a)	Explain the phases of the compiler with a neat diagram.	13	K2	CO1
		OR			
	b) i)	Explain the various compiler construction tools.	8	K2	CO1
	ii)	Explain in detail about cousins of compiler.	5	K2	CO1
12.	a) i)	Compute First() and Follow() function for the following grammar. S ->(L) | a L -> L,S | S	6	K3	CO3
	ii)	Consider the grammar S –> S + S S –> S * S S –> id Perform Shift Reduce parsing for input string "id + id * id"	7	K3	CO3
		OR			
	b)	Construct SLR parsing table for the following Grammar E → E+T | T T → T*F | F F → (E) | id	13	K3	CO3

13.	a)	Describe in detail the various methods of implementing the three address code with suitable examples.	*13*	*K2*	*CO4*
		OR			
	b)	Summarize the working of a simple type checker.	*13*	*K2*	*CO4*
14.	a)	Outline the concept of storage allocation strategies used in compiler design.	*13*	*K2*	*CO5*
		OR			
	b)	Outline the issues in the design of a code generator.	*13*	*K2*	*CO5*
15.	a)	Explain the principal sources of optimization techniques with suitable examples.	*13*	*K2*	*CO6*
		OR			
	b)	Elucidate the global data flow analysis in compiler design.	*13*	*K2*	*CO6*

PART - C (1× 15 = 15 Marks)

16.	a)	For a given RE (a|b)*abb construct DFA using Direct method.	*15*	*K3*	*CO2*
		OR			
	b)	Describe in detail the tool for generating Lexical analyzer with an example program.	*15*	*K2*	*CO2*