Hall Ticket Number :										

R-19

Code: 19A561T

III B.Tech. II Semester Supplementary Examinations Nov/Dec 2023

Compiler Design

(Computer Science and Engineering)

Max. Marks: 70 Time: 3 Hours

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Answer *five* questions by choosing one question from each unit (5 x 14 = 70 Marks)

			Marks	CO	BL
		UNIT–I			
1.	a)	Explain various phases in the construction of compiler with a neat sketch.	7M	CO1	L2
	b)	Define LEX tool? Explain the general format of a LEX Program?	7M	CO1	L1
		OR			
2.	a)	Define about Finite Automata and their types of Finite Automata with an example?	7M	CO1	L1
	b)	Explain the various phases of a compiler in detail? And also write down the output for the following for each phase? Position = initial + rate *50	7M	CO1	L1
		UNIT–II			
3.		What is Shift-Reduce parser and construct Shift Reduce Parser for the input string id*id+id by using The grammar. E→E+E / E-E / E*E E→(E) |id	14M	CO2	L1
		OR			
4.	a)	Explain about error recovery in LR parsers.	7M	CO2	L1
	b)	Why we need LR parser and explain the working of LR parser.	7M	CO2	L4
		UNIT–III			
5.		Show that the following grammar is LALR(1) S→Aa | bAc | dc | bda A→d	14M	CO3	L1
		OR			
6.	a)	Compare SLR, CLR and LALR	7M	CO3	L1
	b)	Write short notes on Shift Reduce Parser with an Example	7M	CO3	L1

UNIT–IV

7.	a)	Explain different forms of intermediate code representations?	7M	CO4	L1
	b)	Generate the representation of three address code for the expression given below ((a+b)*(b-c)/(b+a+c))	7M	CO4	L6

OR

8.	a)	What is a basic block and explain the construction of basic blocks for the given code with an example?	7M	CO4	L2
	6)	Explain quadruple notation with an example	7M	CO4	L2

UNIT–V

9.	a)	What is a Flow Graph and explain about Reducible and Non-Reducible flow graphs.	7M	CO5	L1
	b)	What is loop optimization and explain about loop unrolling and strength reduction.	7M	CO5	L1

OR

10.	a)	Explain Peephole optimization techniques with suitable example	7M	CO5	L2
	b)	Explain in detail about the Register allocation and assignment.	7M	CO5	L2

*** End ***