

END SEMESTER EXAMINATION(ESE) DEC. – 2022

Course Name: System Programming and Compilers, Course Code: 201DSL301

Day and Date: Tuesday, 05/12/2022

Time: 10:00 am to 12:00 pm

Seat No:

Max. Marks- 50

Instructions:

- Question No. 1&2 is compulsory.
- Figure to the right indicate full marks.

BT	CO's	Q.No.		Marks
		Q.1	All Questions are compulsory	20
1,2	CO1	a	Explain lexical analysis and syntax analysis phase in compilation process.	6M
1,2	CO2	b	Discuss the various phases of compiler and trace the program segment $c=a+b*4$ for all phases.	7 M
1,2	CO1	c	Explain and show usage by giving examples of following assembler directives: ORIGIN, EQU, LTORG, START.	7 M
		Q.2	All Questions are compulsory	10
1,2	CO3	a	Explain operator precedence parser. Let a grammar for a language is $E \rightarrow E+E \mid E * E \mid id$. Check validity of following string using stack based operator precedence parser. $id + id * id$	4
1,2	CO3	b	Consider following grammar $S \rightarrow aSbS \mid bSaS \mid \epsilon$ Derive the string abab. Draw corresponding parse tree. Are these rules ambiguous? Justify.	6
		Q.3	All Questions are compulsory	10
1,2	CO4	a	Define an attribute. Give the types of an attribute	3
1,2	CO4	b	Define DAG. Give an example	7
		Q.4	Attempt any two out of three questions	10
1,2	CO5	a	Explain the peephole optimization in detail.	5
1,2	CO4	b	What is the purpose of code optimization? Explain in detail about loop Optimization with example	5
1,2	CO5	C	Write a short notes on basic blocks and flow graphs.	5
