**Question Paper Code** 

11847

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

Sixth Semester

## Computer Science and Engineering 20CSPC602 – COMPILER DESIGN

(Regulations 2020)

Duration: 3 Hours

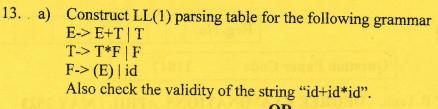
Max. Marks: 100

## PART - A $(10 \times 2 = 20 \text{ Marks})$

Answer ALL Questions

1.	Describe the two parts of a compilation.	Marks, K-Level, CO 2,K2,CO1
2.	List out the cousins of compiler.	2,K1,CO1
3.	Show the advantage of having sentinels at the end of each buffer halves in buffer pairs.	2,K1,CO2
4.	List the various parts in LEX program.	2,K1,CO2
5.	Define handle pruning.	2,K1,CO3
6.	Define an ambiguous grammar.	2,K1,CO3
7.	Write the 3-addr code for the statements $a = b^*-c + b^*-c$ .	2,K1,CO4
8.	What is static checking?	2,K1,CO4
9.	What is an Activation tree?	2,K1,CO5
10.	What are basic blocks?	2,K1,CO5
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	PART - B ( $5 \times 13 = 65$ 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
	b) (i) Explain language processing system with neat diagram.	7,K2,CO1
	(ii) State the complier construction tools and explain them.	6,K2,CO1
12.	a) (i) Construct the transition diagram for relational operators and unsigned numbers.	7,K2,CO2
	(ii) Explain lexeme, token and pattern with a suitable example  OR	6,K2,CO2
	b) For the given Regular Expression construct DFA using Direct method	13,K3,CO2

(a|b)\*abb.



13,K3,CO3

- b) Construct a SLR parsing table by examining the following grammar. 13,K3,CO3 S->CC C->cC | d and use the string "cdd" to parse with the SLR Parsing Table.
- 14. a) Describe the representation of 3-address code for a = b \* - c + b \* - c.

13,K2,CO4

OR

- Explain how Backpatching be used to generate code for Boolean expressions and flow of control statements.
- 15. a) Discuss the various storage allocation strategies in detail. 13,K2,CO5

b) (i) Explain the various issues in the design of code generation in detail. 7,K2,CO5 (ii) Explain the simple code generation algorithm in detail. 6,K2,CO5

## PART - C $(1 \times 15 = 15 \text{ Marks})$

Explain briefly about the principal sources of optimization. 16.

15,K3,CO6

b) Explain global data flow analysis for the following

15, K2, CO6

