			Reg. No. :											
Question Paper Code: U6201														
B.E./B.Tech. DEGREE EXAMINATION, NOV 2024														
Sixth Semester														
Computer Science Engineering														
21UCS601- PRINCIPLES OF COMPILER DESIGN (Regulation 2021)														
Duration: Three hours Maximum: 100									00 M	larks				
1.	PART A - $(5 \times 1 = 5 \text{ Marks})$ How many tokens the statement sum=sum+I; has?										CO	D1- U		
	(a) 5		(b) 6		(	c) 10				(d	) 15			
2.	Which of the following are kernel items? i) $E \rightarrow .E+T$ ii) $S' \rightarrow .S$ iii) $T \rightarrow T.*F$ iv) .(E)										CO	D1- U		
3.	(a) i,ii only(b) i,iii only(c) ii and iii only(d) i andIn programming, Boolean expressions are used						nd iv	only CO	) 01- U					
	<ul><li>i) To Compute the logical values</li><li>ii) As conditional expressions in flow control statements</li></ul>													
	(a) i only		(b) ii only		(	c) i a	nd ii			(d	) nor	ne.		
4. Which of the following known as the text part of a program that does CO1- U not change at runtime. Its memory requirements are known at the compile time?								D1- U						
	(a) Code		(b) Procedures	5	()	c) Va	ariab	les		(d	) All	of th	ne ab	ove
5.	5. What is the equivalent optimized expression of $x=x*2?$ CO1- U							D1- U						
	(a) x=x/2		(b) x=x*0.5		()	c).x=	x+x			(d	) x=x	х-х		
			PART –	B (5	x 3=	= 15	Marl	ks)						
6. 7.	<ul><li>5. Explain the role of lexical analyzer.</li><li>7. What is Handle Pruning?</li></ul>									CO1 CO2	-U -U			
8.	. What is synthesized and inherited attributes?										CO1	-U		
9. 10.	<ul><li>What are the limitations of stack allocation?</li><li>What is peephole and what is the need of peephole optimization?</li></ul>									CO1 CO1	-U -U			

		PART – C (5 x 16= 80 Marks)		
11.	(a)	Construct an NFA equivalent to the regular expression $(0+1)^*(00+11)(0+1)^*$	CO2-App	(16)
		Or		
	(b)	Write the regular expression for the pattern starting with "#" and ending with ";" with middle portion is the pattern for identifier. Derive the DFA for the pattern.	CO2-App	(16)
12.	(a)	Check whether the following grammar is a LL (1) grammar. $S \rightarrow iEts   iEtSeS   a$ $E \rightarrow b$ and Parse the string "ibtibtaea"	CO2-App	(16)
		Or		
	(b)	Construct LALR parsing table for the grammar S→CC C→cC d	CO2-App	(16)
13.	(a)	Explain about Type checking and Type Conversion with examples Or	CO1-U	(16)
	(b)	Explain the translation of Boolean expressions in detail.	CO1-U	(16)
14.	(a)	Describe the issues in design of code generator. Or	CO1-U	(16)
	(b)	Explain in detail about storage allocation strategies.	CO1-U	(16)
15.	(a)	What happens if you do not optimize the code? If you optimize what are the issues associated with the optimization? What are the principle sources of optimization? Explain with example.	CO1- U	(16)
	(b)	Explain the principal sources of optimization in detail.	<b>CO1-</b> U	(16)
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