DHANALAKSHMI COLLEGE OF ENGINEERING, CHENNAI
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
MODEL EXAMINATION-III
CS8602- COMPILER DESIGN

Year   : III
Semester: VI

Date   : 19-05-23
Duration   : 3 hrs
Maximum Marks   : 100

PART - A (10 × 2 = 20 marks)
Answer ALL the questions

1.	What is sentinel? What is its purpose?	U	CO1
2.	Why is buffering used in lexical analysis? what are the commonly used buffering methods.	U	CO1
3.	Draw NFA for a*/b*	K	CO2
4.	Eliminate left recursion from the following grammar A->Ac/Aad/bd/c	U	CO2
5.	Write a CF grammar to represent palindrome.	K	CO3
6.	Define Role of Parser.	K	CO3
7.	Mention the two rules for type checking	U	CO4
8.	Give syntax directed translation scheme for case statement	A	CO4
9.	Draw the DAG for the statement a=(a*b+c)-(a*b+c)	K	CO5
10.	Define Dead Code Elimination.	A	CO5

PART B -(5 x 13 = 65)

11.a.	Explain phases of compiler for the following expression position= initial + rate*60. (13).		U	CO1
	(or)			
b.	Construct NFA to DFA using subset construction algorithm for the regular expression (a/b)*a and minimize it.		K	CO1
12.a.	Explain Role of Parser in Detail.		U	CO2
	(or)			
b.	i)Explain Error Handling and recovery in syntax analysis phase(10) ii) Explain left recursion and left factoring with an example.(3)		U	CO2
13.a.	Construct a predictive parsing table for the following two grammars E->E+T E->T T->T*F		A	CO3

T->F
F->(E) | id

		(or)	A	CO3

13 b Consider the following grammar
S->AS|b
A->SA|b
Construct the LR and SLR parse table for the grammar.
Show the actions of the parser for the input string "abab".

14.a.	Explain Construction of Syntax Tree with an example.	U	CO4
	(or)		
b.	Write a simple code generator algorithm. With an example code how the algorithm generate code.	U	CO4
15.a.	Explain Principles of source optimization in detail.	A	CO5
	(or)		
b.	Explain Peephole Optimization in Details	A	CO5

PART - C (1x15=15)

16.a.	Discuss the various issues in design of Code generator	A	CO3
	(or)		
b.	Explain in detail about specification of type checking.	A	CO4

Prepared by   Verified by   Approved by