

Code: 20CS602PC

SET-II

HT NO:

7

R

**CMR TECHNICAL CAMPUS  
UGC AUTONOMOUS**

**B. Tech. VI Semester Regular End Examinations, May-2023**

**Compiler Design**

**Common to CSE, IT, CSM&CSD**

Time: 3 Hours

Max. Marks: 70

**Note**

- i. This Question paper contains Part- A and Part- B.
- ii. All the Questions in Part A are to be answered compulsorily.
- iii. All Questions from Part B are to be answered with internal choice among them.

\*\*\*\*

**PART-A**

10 X 02 = 20 Marks

		Marks	CO	BL
1.	a	2	CO1	L1
	b	2	CO1	L1
	c	2	CO2	L1
	d	2	CO2	L1
	e	2	CO3	L1
	f	2	CO3	L1
	g	2	CO4	L1
	h	2	CO4	L1
	i	2	CO5	L1
	j	2	CO5	L1

**PART- B**

5 X 10 = 50 Marks

		Marks	CO	BL
2.	a	5	CO1	L2
	b	5	CO1	L2
	OR			
3.	a	6	CO1	L2
	b	4	CO1	L2

- 4 a Construct Predicative parser for the following grammar. 5 CO2 L2  
 $E \rightarrow E+T/T$   
 $T \rightarrow TF/F$   
 $F \rightarrow F*/a/b$
- b Check whether the following grammar is SLR (1) or not. Explain your answer with Reasons.  $S \rightarrow L=R$ ,  $S \rightarrow R$ ,  $L \rightarrow *R$ ,  $L \rightarrow id$ ,  $R \rightarrow L$  5 CO2 L2  
OR
- 5 a Consider the following grammar 8 CO2 L2  
 $S \rightarrow (L)/a$   
 $L \rightarrow L,S/S$  find FIRST and FOLLOW
- b Mention the types of LR parser. 2 CO2 L1
- 6 a What do you mean by attributed grammars? Discuss the translation scheme for Converting an infix expression to its equivalent postfix form. 5 CO3 L1
- b Explain various storage allocation strategies with examples. 5 CO3 L2  
OR
- 7 a Construct a quadruple, triples for the following expression: 8 CO3 L2  
 $a + a*(b-c) + (b-c)*d$  ?
- b Define type expression with an example? 2 CO3 L1
- 8 a Explain Lazy-code motion problem with an algorithm 5 CO4 L2  
b Explain in detail about Specification of a simple type checker. 5 CO4 L2  
OR
- 9 a Discuss about the following: 5 CO4 L3  
a) Copy Propagation  
b) Dead code Elimination
- b Explain various issues in design Code Generator. 5 CO4 L2
- 10 a What is DAG and flow graph? Explain their role in compilation process 5 CO5 L1
- b Explain data-flow analysis of structural programs 5 CO5 L2  
OR
- 11 a Give an example to show how DAG is used for register allocation 5 CO5 L2  
b Explain data-flow schemas on basic blocks with flow graphs 5 CO5 L2

CO : Course Outcomes

BL : Bloom's Taxonomy Levels

L 1 : Remembering

L 2 : Understanding

L 3 : Applying

L 4 : Analysing

L 5 : Evaluating

L 6 : Creating