Enrolment No./Seat No_____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VII EXAMINATION – SUMMER 2025

Subject Code:2170701 Date:19-05-2025

Subject Name:Compiler Design

Time:02:30 PM TO 05:00 PM Total Marks:70

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**
4. **Simple and non-programmable scientific calculators are allowed.**

			MARKS
Q.1	**(a)**	Define following terms. i) Token ii) Lexeme iii) Handle pruning	**03**
	(b)	Draw Transition diagram of following: i) Relational operators. ii) Unsigned Operator.	**04**
	(c)	Explain various Phases of compiler with neat diagram and suitable examples.	**07**
Q.2	**(a)**	Explain role of Lexical Analyzer and its input buffering techniques.	**03**
	(b)	Explain finite Automata in brief and explain its role in lexical.	**04**
	(c)	Construct SLR parsing table for the following grammar : E -> T+E | T T -> i	**07**
		OR	
	(c)	Explain subset construction method for constructing DFA from an NFA with an example.	**07**
Q.3	**(a)**	Explain ambiguous grammar with suitable example.	**03**
	(b)	Explain three address code mechanism.	**04**
	(c)	Explain operator precedence parsing method with example.	**07**
		OR	
Q.3	**(a)**	Explain Parse Tree with appropriate examples.	**03**
	(b)	Write a difference(s) between CLR, SLR and LALR methods.	**04**
	(c)	Show that the following grammer S-> AaAb | BbBa A -> ϵ B -> ϵ is not SLR(1).	**07**
Q.4	**(a)**	List Error Recovery Strategies in Compiler and Explain any one.	**03**
	(b)	Explain various parameter passing methods.	**04**
	(c)	Explain quadruples, triple and indirect triple form of three address code with example	**07**

OR

Q.4	**(a)**	Explain operator grammar with an example.	**03**
	(b)	Discuss synthesized and inherited attributes using a suitable grammar.	**04**
	(c)	Write and explain the generic issues in the design of code generators.	**07**
Q.5	**(a)**	Differentiate: Static v/s Dynamic Memory Allocation	**03**
	(b)	Explain Activation record in detail.	**04**
	(c)	Short note on Peephole Optimization Techniques.	**07**

OR

Q.5	**(a)**	Explain Control Stack.	**03**
	(b)	Explain Dynamic storage allocation technique.	**04**
	(c)	Explain symbol table management	**07**

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