Seat No.: _____ **Enrolment No._____**

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VII (OLD) - EXAMINATION – SUMMER 2017

Subject Code: 170701 **Date: 09/05/2017**

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.**

Q.1	**(a)**	Explain various phases of compiler with example.	**07**
	(b)	Explain input buffering methods.	**07**
Q.2	**(a)**	Explain symbol table with two data structures suitable for it.	**07**
	(b)	Construct a DFA without constructing NFA for the following regular expression. (a | b) * a	**07**
		OR	
	(b)	Explain subset construction method with an example.	**07**
Q.3	**(a)**	Explain SLR parsing method with an example.	**07**
	(b)	How do you check whether the grammar is LL (1) or not? Justify your answer with appropriate example.	**07**
		OR	
Q.3	**(a)**	Explain operator precedence parsing method.	**07**
	(b)	Check the following grammar is LR(1) or not. $S \rightarrow AaAb$ $S \rightarrow BbBa$ $A \rightarrow \varepsilon$ $B \rightarrow \varepsilon$	**07**
Q.4	**(a)**	Discuss differences between inherited attributes and synthesized attributes.	**07**
	(b)	Write a short note on various representations of three address code.	**07**
		OR	
Q.4	**(a)**	Explain syntax directed translation scheme with example.	**07**
	(b)	Define: DAG. Explain DAG representation of basic block with example.	**07**
Q.5	**(a)**	Discuss various code optimization methods.	**07**
	(b)	Explain code generator design issues.	**07**
		OR	
Q.5	**(a)**	Explain static storage allocation technique.	**07**
	(b)	Explain activation record organization in brief.	**07**

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