

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. **07**  
 $(a \mid b)^* a$
- 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. **07**  
 $S \rightarrow AaAb$   
 $S \rightarrow BbBa$   
 $A \rightarrow \epsilon$   
 $B \rightarrow \epsilon$
- 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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