

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**BE - SEMESTER-VI (OLD) • EXAMINATION – WINTER 2017**

**Subject Code:160706**

**Date: 13-11-2017**

**Subject Name: System Programming**

**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 Analysis and Synthesis phases of language processor in detail. **07**  
(b) 1. Explain types of grammar. **04**  
2. Compare Syntax tree and parse tree. **03**
- Q.2** (a) Explain language processing activities. **07**  
(b) Compare following terms. **07**  
1. Scanning and parsing  
2. Compiler and Interpreter
- OR**
- (b) Explain left recursion and left factor with example. **07**
- Q.3** (a) What is operator precedence? Draw operator precedence table for '+', '\*', 'id'. **07**  
Parse following expression using the table.  
id+id\*id
- (b) What are assembler directives? Explain any two with example. **07**
- OR**
- Q.3** (a) Explain variant-I and variant-II of the intermediate code generated from assembler. **07**  
(b) Define FA. Construct the DFA for (ab + bb)\* **07**
- Q.4** (a) Explain Macro Preprocessor. **07**  
(b) Explain the following terms in Macro. **07**  
KPDTAB, EVTAB, SSTAB, MDT
- OR**
- Q.4** (a) What are advanced Macro facilities? Explain with example. **07**  
(b) Differentiate and explain one pass and two pass Compilers. **07**
- Q.5** (a) Discuss parameters for activation records. **07**  
(b) What is an overlay? Explain overlay structured program and its execution. **07**
- OR**
- Q.5** (a) Define various code optimization transformations. **07**  
(b) Explain following terms. **07**  
1. Absolute loader  
2. Linker

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