

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VI (OLD) EXAMINATION – WINTER 2018

Subject Code:160706

Date: 27/11/2018

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)** What is Language Processor? Explain all phases of a compiler with neat diagram and example. **07**
- (b)** Define the following terms: **07**
(i) Specification Gap (ii) Execution Gap (iii) Symbol Table (iv) Ambiguous Grammar (v) System Software (vi) Assembler (vii) Interpreter
- Q.2 (a)** Write a short note on Two Pass Assembler. **07**
- (b)** Define forward references. Explain Assembler Directives. **07**
- OR**
- (b)** Describe in details Advance Macro Facilities. **07**
- Q.3 (a)** i. Define a Grammar. Explain types of Grammar. **07**
ii. Compare top down and bottom up parsing.
- (b)** What is left recursion? Remove Left Recursion from following production rule: **07**
 $A \rightarrow AaB \mid x, B \rightarrow BCb \mid y, C \rightarrow Cc \mid \epsilon$
- OR**
- Q.3 (a)** Write an algorithm for operator precedence parsing and explain with example. **07**
- (b)** What is LL(1) parser? What is First and Follow? Pars following string : **07**
 $id + id - (id * id)$
- Q.4 (a)** Design and explain in details MS-DOS linker. **07**
- (b)** Describe in details MDT, MNT, KPT and EVS. **07**
- OR**
- Q.4 (a)** Design and explain Absolute Loader with Example **07**
- (b)** Write a short note on Design issues of Macro Processor. **07**
- Q.5 (a)** What is program relocation? How can program relocation performed? **07**
- (b)** Explain different Code Optimization techniques with example. **07**
- OR**
- Q.5 (a)** What is Memory Allocation? Explain techniques of Dynamic Memory Allocation. **07**
- (b)** Write a three address code and triple representation for **07**
 $x = x * y * z + x * y + y * z$
