

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VI(OLD) – EXAMINATION – SUMMER 2019

Subject Code:160706

Date:16/05/2019

Subject Name: System Programming

Time:10:30 AM TO 01:00 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 Language Processing Activities in brief. **07**
(b) What is Grammar and CFG? Give a classification of Grammars. **07**

- Q.2 (a)** Explain Left recursion, Left factoring and Backtracking in top down parsing. **07**
(b) Given the grammar, evaluate the string id-id*id using shift reduce parser. **07**
 $E \rightarrow E - E, \quad E \rightarrow E * E, \quad E \rightarrow id.$

OR

- (b)** Explain recursive decent parser with proper example. Write its disadvantages. **07**

- Q.3 (a)** What is Compiler? Explain all phases of Compiler with neat flowchart. **07**
(b) Compare one pass and two pass Assembler. Write an algorithm of Single Pass Assembler. **07**

OR

- Q.3 (a)** Differentiate the terms: **07**
1. Top Down and Bottom Up Parsing 2. Compiler and Interpreter
(b) Explain in brief the design of a macro assembler. **07**

- Q.4 (a)** Explain use and field of following tables of macro: **07**
KPDTB, SSTAB, MDT, EVTAB
(b) Define forward references. How it can be solved using back patching? Explain with example. **07**

OR

- Q.4 (a)** Explain this terms in detail : LITTAB, POOLTAB, LTORG, EQU **07**
(b) Write a three address code and triple representation for **07**
 $x = x * y * z + x * y + y * z$

- Q.5 (a)** Explain Direct linking Loader. **07**
(b) What is Code Optimization? Explain techniques of it in brief. **07**

OR

- Q.5 (a)** What is Program Relocation? Explain Self Relocating Programs and MS Dos Linker. **07**
(b) Explain in brief design of a Two Pass Assembler. **07**
