

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

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

Subject Code: 160706

Date: 03/05/2017

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) (i) Differentiate System and Application software. **07**
(ii) Define : Language Processor, Language Migrator, Backpatching, SSM
(b) What does “1” indicate in LL(1) Parsing? Explain LL(1) Parsing with example. **07**

- Q-2** (a) Explain Analysis & Synthesis Phases of Language Processor with Example. **07**
(b) Implement Operator Precedence Parsing for the string : **07**
“ id + id * (id – id) / id “

OR

- (b) Implement DFA from : $a^*(b^* | c^*)^*b^*d^* \#$ **07**

- Q.3** (a) Given the following source program **07**

```
START      300
A   DS      5
L1  MOVER   AREG, B
     ADD     AREG, C
     MOVEM   AREG, D
D   EQU     A + 1
L2  PRINT   D
     ORIGIN  A – 2
C   DC      '52'
     ORIGIN  L2 + 3
     STOP
B   DC      '46'
     END     L1
```

Show the Intermediate code generated for the program

- (b) Explain Assembly Scheme. **07**

OR

- Q.3** (a) Explain OPTAB, SYMTAB, LITAB , POOLTAB with example. **07**
(b) Differentiate Single Pass and Two Pass Translation Scheme for Assembler. **07**

- Q.4** (a) Explain Nested Macro call with example. **07**
(b) Explain Advanced Macro Facilities with example. **07**

OR

- Q.4** (a) Explain Design of a Macro Pre Processor in brief. **07**

(b) Write a MACRO that take A , B , C , D as parameters and calculate **07**
 $A=B+B*C+C*D$.

Q.5 (a) What is Overlay? Explain the execution of an overlay structured program. **07**

(b) Explain Code Optimization Techniques with example. **07**

OR

Q.5 (a) Explain Relocation with its algorithm and example. **07**

(b) Explain Quadruple, Triple and Indirect Triple with example. **07**