

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
MCA - SEMESTER– III • EXAMINATION – WINTER - 2017

Subject Code:630005

Date:04/01/2018

Subject Name: System Software

Time: 10:30 a.m. – 01:00 p.m.

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)** Define **07**
- i. Specification gap
 - ii. Production
 - iii. Binding
 - iv. System software
 - v. Translated time origin
 - vi. Self-relocating program
 - vii. Absolute loader
- (b)** Give the difference between character device drivers and block device drivers. Also list and explain any three entry points of character device drivers. **07**
- Q.2 (a)** i. Write a short note on Debug Monitors **04**
ii. Write the algorithm for Macro expansion **03**
- (b)** i. In brief write a note on REPT and IRP statements? **03**
ii. Discuss – ORIGIN, LTORG and EQU assembler Directives? **04**
OR
- (b)** Discuss translated, linked and load origins and address? Also explain relocation factor. **07**
- Q.3 (a)** Write the algorithm for Second Pass Assembler. **07**
(b) What is parsing? What are the basic problems faced by the Top-down parser? Explain in brief. **07**
OR
- Q.3 (a)** Explain all the data structure used in pass-I of assembler with proper example. **07**
(b) Explain memory allocations scheme used in compilers and interpreters. **07**
- Q.4 (a)** Explain LL (1) parser. **07**
(b) Explain – DISPLAY, DOPE VECTOR, TRIPLES, INDIRECT TRIPLES, QUADRUPLES, Operand Descriptor, and Register Descriptor? **07**
OR
- Q.4 (a)** Throw a light on Code Optimization? Explain all the code optimization techniques? **07**
(b) i. What are the different types of Statements used in Assembler? **04**
ii. Write a short note on editors. **03**
- Q.5 (a)** What is FSA? Define DFA? Draw a DFA that identifies all the floating variables present in a given string? **07**
(b) What is the advantage of Overlay? How it works? Explain in detail **07**
OR
- Q.5 (a)** Explain Expansion Time Statements and Expansion Time Variables? **07**
(b) What is Parsing? Differentiate between parse tree and abstract syntax tree. **07**
