

Seat No.: _____

Enrolment No. _____

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

Subject Code: 2630005

Date: 07/06/2017

Subject Name: System Software (SS)

Time: 02:30 PM – 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 the following: **07**
- i) Grammar
 - ii) Semantic Gap
 - iii) Sequence Symbol
 - iv) Language Processor
 - v) Translator
 - vi) Assembler
 - vii) LEX
- (b)** Differentiate between Assembly Language and Machine Language. Give suitable example. **07**
- Q.2 (a)** What do you mean by Lexical Analysis? List all notations used in regular expression. Draw DFA and STT for an input token $a^*(bcd)^+$. **07**
- (b)** Differentiate between Variant-I and Variant-II of the intermediate code. **07**
- OR**
- (b)** Explain with suitable example the techniques of code optimization. **07**
- Q.3 (a)** Explain any three Assembler Directive in detail. **07**
- (b)** Differentiate between DFA with FSA. Generate the DFA for any regular expression of your choice and explain. **07**
- OR**
- Q.3 (a)** Discuss overlay techniques. Also write its advantages. **07**
- (b)** Discuss derivation and reductions with suitable example. **07**
- Q.4 (a)** Discuss an algorithm of Pass – I of Linker. **07**
- (b)** Discuss all the components of object module of a program. **07**
- OR**
- Q.4 (a)** Discuss how nested Macro call is processed by Macro preprocessor using extended stack model. **07**
- (b)** Explain Triple and Quadruple. Generate triple and quadruple entries for any expression of your choice. **07**
- Q.5 (a)** What do you mean by a hash table? Explain various hashing methods. **07**
- (b)** Explain any seven Assembly language statements with suitable example. **07**
- OR**
- Q.5 (a)** Explain FSA in detail. **07**
- (b)** Explain two pass assembler in detail. **07**
