

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
MCA - SEMESTER-III • EXAMINATION – WINTER 2016

Subject Code: 630005

Date: 06/01/2017

Subject Name: System Software

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)** Define following terms : **07**
1. System software
 2. Language processor
 3. Forward Reference
 4. Production
 5. Grammar
 6. Terminal symbol
 7. Nested macro
- (b)** Do As Directed : **07**
1. A macro is expanded when macro is ____ .
 2. List out assembly statements.
 3. What is Linking and Relocation?
 4. What is DFA?
 5. _____ converts assembly language into machine language.
 6. _____ and _____ are the phases of language processor.
 7. Give the difference between compiler and interpreter.
- Q.2 (a)** Explain Front – end and Back – end of toy compiler with example. **07**
- (b)** Explain debug monitor and types of editor in detail. **07**
- OR**
- (b)**
1. List and explain categories of grammar. **04**
 2. Explain call by value and call by reference with suitable e.g. **03**
- Q.3 (a)**
1. Explain AIF, AGO and ANOP with e.g. **03**
 2. Explain macro parameters with e.g. **04**
- (b)** Explain data structures of assembler with e.g. **07**
- OR**
- Q.3 (a)** Explain data structures of macro with e.g. **07**
- (b)**
1. Give difference between variant – I and variant – II. **03**
 2. Explain LORG, DC and mnemonic codes. **04**
- Q.4 (a)** Explain triples and quadruples in detail with e.g. **07**
- (b)** Using the following grammar of RD Parser show whether the following strings are valid or not: **07**
- E ::= T { + T } *
- T ::= V { * V } *
- V ::= <id>
- Input String:
- 1) <id> * <id> * <id>
 - 2) <id> + <id> * <id> <id>

OR

- Q.4 (a)** What is code optimization? Explain local optimization and global optimization in detail. **07**
- (b)**
1. Give difference between static memory allocation and dynamic memory allocation. **04**
 2. What is local and non – local access of variable? **03**
- Q.5 (a)** Explain object module and NTAB of linker in detail with e.g. **07**
- (b)** Explain Derivation and Reduction with suitable e.g. **07**
- OR**
- Q.5 (a)** Explain absolute loader, relocative loader and linking loader in detail. **07**
- (b)** Explain linking overlay in detail with e.g. **07**
