

GUJARAT TECHNOLOGICAL UNIVERSITY
MCA - SEMESTER– III EXAMINATION – WINTER 2018
Subject Code: 2630005 **Date: 09-01-2019**
Subject Name: System Software
Time: 10.30 am to 1.00 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)** Answer in brief. **07**
1. Define System Software.
 2. What is Language Processor?
 3. What is Intermediate Representation?
 4. Define Forward Reference.
 5. Define Sequencing Symbol.
 6. What is Token?
 7. What is the use of symbol table?
- (b)**
1. Write short note on Self relocating Program. **03**
 2. Compare Variant-I and Variant-II of the intermediate code. **04**
- Q.2. (a)** Explain Fundamentals of language processing activities by taking suitable example. **07**
- (b)** Discuss various Advanced assembler directives in detail. **07**
- OR
- (b)** Explain toy compiler with front end and back end by considering following C statements. **07**
- ```
int i;
float a, b;
a = b + i;
```
- Q.3. (a)** Write the format of Assembly language statement and Discuss three types of assembly language statements. **07**
- (b)** What is Interpreter? Explain benefits of Interpretation. Write brief note on types of Interpreter. **07**
- OR
- (a)** Define Translated origin, linked origin and load origin. Write short note on object module. **07**
- (b)** Show Operator precedence matrix for + , \* , |- and -|. Trace Operator precedence parser for the input : |- a + b \* c -| **07**
- Q.4. (a)** Show all data structures created during Macro preprocessor pass II. Also list macro pass II algorithm. **07**
- (b)** Explain Classification of Grammars and also discuss Ambiguity of Grammar. **07**

OR

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|------|-----|---------------------------------------------------------------------------------------------------------------------------------------------------|----|
|      | (a) | Discuss how nested Macro call is processed by Macro preprocessor using extended stack model.                                                      | 07 |
|      | (b) | Explain the use of OPTAB, SYMTAB and LITTAB in the Assembler Pass I using suitable example.                                                       | 07 |
| Q.5. | (a) | What is parsing? What are the basic problems faced by the Top-down parser?                                                                        | 07 |
|      | (b) | Explain with suitable example the techniques of code optimization.                                                                                | 07 |
|      |     | OR                                                                                                                                                |    |
|      | (a) | What is difference between Local and Global optimization? Discuss the issues related to Common Sub expression Elimination in Global optimization. | 07 |
|      | (b) | Explain the Linking for Overlays in detail.                                                                                                       | 07 |

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