

GUJARAT TECHNOLOGICAL UNIVERSITY
MCA SEM-III Examination- Dec.-2011

Subject code: 630005**Date: 21/12/2011****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) Define following terms **07**

1. Forward reference
2. Specification gap
3. Execution gap
4. Alphabet
5. Production
6. Binding
7. Hybrid entry format

- (b)**
1. What is Parsing? Differentiate between parse tree and abstract syntax tree. **02**
 2. How continuation check and backtracking is performed in top down parsing? **02**
 3. List bottom up parsing algorithm. Also discuss drawbacks of this algorithm. **03**

Q.2 (a) **03**

1. Explain Object module and its components.
2. Write short note on Absolute Loader and Relocatable loader. **04**

- (b)** Define Local Optimization and Basic block. Explain with suitable example - how value number technique is applied on basic block. **07**

OR

- (b)**
1. Write short note on Parameter passing mechanism. **04**
 2. Write short note on – control flow analysis. **03**

Q.3 (a) Write short note on Triples and Quadruples with suitable example. **07**

- (b)**
1. List and explain all data structures used in pass-I of an assembler. **04**
 2. Compare Variant I and Variant II. **03**

OR

Q.3 (a) Explain Data flow concept - Available Expression with suitable example. **07**

- (b)**
1. List and explain advantages of an Assembly language over machine language. **03**
 2. Explain pass II of the Assembler algorithm. **04**

Q.4 (a) **03**

1. Define: Translated origin, Linked origin and Load origin.
2. Explain Conditional Expansion with suitable example. **04**

- (b)** List and explain all the data structures used in Pass – I of Macro preprocessor. **07**

OR

- Q.4** (a) 1. Write short note on Expansion time variables. **03**
 2. Write short note on Self-relocatable programs. **04**
 (b) List and explain Pass – I algorithm of Macro preprocessor. **07**
- Q.5** (a) Discuss the design of an Editor. Also explain all types of editors. **07**
 (b) 1. Write short note on character device driver. **04**
 2. Explain Static and Dynamic memory allocation in block structured programming language. **03**
- OR**
- Q.5** (a) Draw and explain the structure of User Interface. Also explain Menulay and Hypercard UIMS. **07**
 (b) 1. Explain block device driver. **04**
 2. Explain the term – Backpatching in single pass assembler. **03**
