

GUJARAT TECHNOLOGICAL UNIVERSITY**BE- VIth SEMESTER-EXAMINATION – MAY- 2012****Subject code: 160706****Date: 22/05/2012****Subject Name: System Programming****Time: 10:30 am – 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) Explain Left recursion, Left factoring and backtracking in top down parsing. **07**

(b) Explain various steps of code optimization with example.. **07**

Q.2 (a) Explain Design of Macro Preprocessor. **07**

(b) Explain Absolute Loader with example. **07**

OR

(b) Explain BSS loader with example. **07**

Q.3 (a) Explain two pass assembler. **07**

(b) Given the Grammer, evaluate the string id-id*id using shift reduce parser. **07**

E-> E – E

E -> E * E

E -> id

OR

Q.3 (a) Explain the data structure of single pass assembler. **07**

(b) Given the grammer, perform the top-down parsing for the the string +*35*45 **07**

E = +TE|E

T = *VT|V

V= 0|1|2|3|.....|9

Q.4 (a) What is macro in programming language. Write an algorithm for macro definition. **07**

(b) Explain dynamic linking. Draw the flow chart for dynamic linking. **07**

OR

Q.4 (a) Draw a flow chart and explain simple one pass macro processor. **07**

Q.4 (b) Explain linking and loading in MS DOS. **07**

Q.5 (a) Explain triple and quadrable representation with example. **07**

(b) Explain lexical analysis and syntax analysis phase in compilation process. **07**

OR

Q.5 (a) Discuss parameters for Activation Records. **07**

(b) Develop Regular expression and DFA for declaring a variable in 'C' language. **07**
