MCA 303 SYSTEM SOFTWARE

Time : Three hours   **Maximum : 75 Marks**

Part A
Answer any ten questions.
Each question carries 3 marks.

1. Differentiate between System Software and Application Software.
2. What is meant by LC processing?
3. Explain about nested macro call.
4. Explain about self relocatable loaders.
5. Explain about the role of the lexical analyzer.
6. Explain about NFA.
7. Explain context free Grammar.
8. What is meant by Ambiguity in a grammar.
9. Explain about back patching.
10. Explain triples with examples.
11. What are all the problems with top down parsing?
12. Explain about Boot strap loader.

(10 x 3 = 30 marks)

Part B

All questions carry equal marks.

13.   a) With example explain the pass structure of assemblers.
                                     OR
        b) Discuss the design of a two pass assembler.

14.   a) Define Macro. Explain different types of parameters used in a macro
         with an example.   [5]
        Discuss the features of loader.   [4]
                                     OR
        b) Explain about Editors.

15.   a) What are the major responsibilities of the front phase of a compiler?
         Explain with a suitable example.
                                     OR
        b) Design an algorithm to convert a given NFA in to equivalent DFA.

16. a) Explain syntax directed translation scheme for a desk calculator.

OR

b) Explain about stack implementation of shift reduce parsing.

17. a) Translate the expression

   (a+b) * (c+d) + (a+b+c)

   i)   Quadraples   ii) Triples   iii) Indirect triples

OR

b) Discuss the various issues in the design of a code generator.

(5 X 9 = 45 marks)