6/05/2019

Roll No. ....   **Total Pages : 03**

MCA/M-19   **10501**
SYSTEM PROGRAMMING
MCA-14-21

Time : Three Hours]   [Maximum Marks : 80

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. Q. No. **1** is compulsory. All questions carry equal marks.

1. (a) What is the Chomsky hierarchy of formal languages ?

    (b) What is the difference between absolute and relocatable loader ?

    (c) Differentiate between top-down and bottom-up parsing.

    (d) What do you understand by static and dynamic scoping ?

Unit I

2. (a) What do you understand by user-centric and system-centric view of system software ? Explain.

    (b) What is symbol table ? Discuss the structure of it.

3. (a) What is system software ? What are the goals of system software ? Explain.

   (b) What is compiler ? What are the different stages in compilation ? Discuss.

Unit II

4. What are the different parameter passing mechanism in macro processors ? Discuss

5. What is forward referencing problem ? How is it solved in one-pass assembler ? Explain.

Unit III

6. (a) Define loader and enlist the basic functions performed by loader.

   (b) Differentiate between regular grammar and context free grammar using suitable examples.

7. What is a parse tree ? How is it created in top-down parsing ? Explain using recursive descent parsing.

Unit IV

8. What do you understand by code optimization ? Discuss the following code optimizing transformations using suitable examples :

   (a) Frequency reduction

   (b) Strength reduction

   (c) Common sub-expression elimination.

9. (a) What do you understand by binding and binding times ? What is the difference between static and dynamic binding ? Explain.

   (b) What is dynamic memory allocation ? Why is the need of dynamic memory allocation in recursion ? Explain.