MCA/M-24   24521

PRINCIPLES OF PROGRAMMING LANGUAGES

MCA-20-24(i)

Time : Three Hours]   [Maximum Marks : 75

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

1. (a)   Write a brief note on readability and writability of programming languages.

    (b)   Give regular expressions for binary strings ending in 01.

    (c)   What is the associativity of operators? Discuss the operators in C language that has the associativity right to left.

    (d)   What is scheduled subprogram ?

Unit I

2. (a)   What do you understand by parse tree and parsing ? Differentiate between top-down and bottom-up parsing.

(b) What is BNF grammar ? Explain using suitable example.

3. (a) What are the different stages in compilation ? Discuss.

(b) What is Binding ? What are the different types of binding ? Illustrate.

Unit II

4. (a) What is a regular grammar ? Give the regular grammar for all strings over {0, 1} containing the string 010.

(b) What do you understand by type promotion ? Explain by using suitable example from C language.

5. (a) Show that the set of odd-length strings over the alphabet {*a*, *b*} that are not palindromes is a context free language.

(b) What is the difference between static and dynamic type checking ? Discuss.

Unit III

6. (a) What do you understand by Abstract Data Type (ADT) ? Discuss the Stack ADT.

(b) What is Polymorphism ? What are the different types of it ? Discuss.

7. (a) What do you understand by implicit and explicit sequence control ? Discuss in brief the sequence control between the statements.

(b) What is Reusability ? How is it implemented in object oriented approach ? Discuss.

Unit IV

8. Differentiate between the following :
(a) Static scoping and Dynamic scoping
(b) Call by value and Call by return.

9. (a) What do you understand by heap storage management ? Discuss.

(b) What is parallel programming ?