COMPUTER SCIENCE
PAPER - I (D-9)

| Time : 3 Hours | 4 Pages | Max. Marks : 50 |

Instructions : (1) All questions are compulsory.

(2) Figure to the right indicate full mark.

(3) Use of any type of calculator not allowed.

(4) Draw a neat diagram wherever necessary.

1. (A) Select the correct alternative and rewrite the following :

   (a) _____ is the only operating system from the following list. 1

   (i) MS point

   (ii) Unix

   (iii) MS Excel

   (iv) Oracle

   (b) The maximum number of nodes is a binary tree of depth 6 is _____. 1

   (i) 64

   (ii) 32

   (iii) 63

   (iv) 6

   (c) A derived class with several base classes is _____ inheritance. 1

   (i) Multiple

   (ii) Hierarchical

   (iii) Single

   (iv) Multilevel

(d) An attribute which defines URL of document to be linked in <A> tag is _____.   1

    (i) RFF

    (ii) VREF

    (iii) HREF

    (iv) ALT

(B) Answer any two of the following :

    (a) Explain context switching at process level in multiprogramming system with example.   3

    (b) Explain memory representation of linked list with a suitable example.   3

    (c) Write any six rules for virtual functions.   3

2. (A) Answer any two of the following :

    (a) Explain the function of the following file stream classes :   3

       (i) ifstream

       (ii) ofstream

       (iii) fstream

    (b) What is a Record ? Write any two distinguishing points between a Record and Linear Array.   3

    (c) What is a Computer Virus ? State any four methods by which a virus can affect other programs.   3

(B) Answer any one of the following :

    (a) Explain binary search algorithm.   4

    (b) Explain the following terms with respect to virtual memory :   4

       (i) Page fault

       (ii) Working set

       (iii) Demand paging

       (iv) Dirty bit

3. (A) Answer **any two** of the following :

    (a) Define the following terms with respect to binary tree :   3

        (i) Depth of tree

        (ii) Degree of node

        (iii) Empty or Null tree

    (b) What is Destructor ? State any four characteristics of Destructor.   3

    (c) Explain the following HTML tags with an example of each :   3

        (i) <PRE>

        (ii)

        (iii) <SUB>

(B) Answer **any one** of the following :

    (a) What is a Process ? Explain running ready and blocked process states of process management.   4

    (b) What is an Inheritance ? Explain any three types of Inheritance in brief with suitable diagrams.   4

4. (A) Answer **any two** of the following :

    (a) Explain in brief the three major services provided by Operating System.   3

    (b) Writing any six important features of object oriented programming.   3

    (c) Draw a binary tree structure for expression :   3

        $E = (p - q) / [(r \# s) + t]$

(B) Answer **any one** of the following :

    (a) Explain call by value and call by reference with suitable examples.   4

    (b) Draw and explain paging model of memory management system.   4

5. Answer **any two** of the following :

   5

(a) Write C++ program to find a factorial of integers from 1 to 5.

(b) Write a C++ program to count and print occurrence of the character 'M'   5
in a given string of maximum 79 characters.

   5

(c) Write HTML code for the following output :

  ☐ Computer

     A. Hardware

       i. Printer

       ii. Monitor

     B. Software

       i. C++

         • arrays

         • pointers

       ii. Java

OR

5. Attempt **any two** of the following :

(a) Write C++ program to read any integer and then check whether it's
prime or not prime no.   5

(b) Write C++ program to generate and print first 15 terms of fibonacci series
(1, 1, 2, 3, 5........)   5

(c) Write HTML code for the following table :   5

		C++
	Java	HTML
VB	C	PASCAL