

DAY - **16**

SEAT NUMBER

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2022

III

23

1030

V - 134

(E)

**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 in 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 :

- (a) Write C++ program to find a factorial of integers from 1 to 5. 5
- (b) Write a C++ program to count and print occurrence of the character 'M' in a given string of maximum 79 characters. 5
- (c) Write HTML code for the following output : 5
- 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