

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 _____

- (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

(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. <https://www.maharashtrastudy.com> 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