DAY - 16 SEAT NUMBER | | | | | | |

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 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 :

(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**