

DAY - 14

SEAT NUMBER

2025	VII	10	1100	V - 144	(E)
<b>COMPUTER SCIENCE PAPER - I (D-9)</b>					
Time : 3 Hours		4 Pages		Max. Marks : 50	

- Instructions :*
- (1) All questions are compulsory.
  - (2) Figures to the right indicate full marks.
  - (3) Use of any type of calculator not allowed.
  - (4) Draw a neat diagram wherever necessary.

1. Select the correct option from the following and rewrite sentences :

- (a) Wastage of memory space within the partition is called as \_\_\_\_\_.  
  - (i) Internal fragmentation
  - (ii) External fragmentation
  - (iii) Compaction
  - (iv) None of these
- (b) \_\_\_\_\_ is 'the only non-linear data structure'.  
  - (i) Array
  - (ii) Stack
  - (iii) Tree
  - (iv) Linked List
- (c) Object oriented programming uses \_\_\_\_\_ approach of programming.  
  - (i) Linear
  - (ii) Non-linear
  - (iii) Top-down
  - (iv) Bottom-up

- (d) In HTML, for green colour RGB code is \_\_\_\_\_. 1
- (i) # 000000
  - (ii) # FF0000
  - (iii) # 00FF00
  - (iv) # 0000FF
- (B) Answer **any two** of the following :
- (a) Explain Running, Ready and Blocked Process. States in process management. 3
  - (b) What is Inserting ? Write an algorithm for inserting an element into a linear array. 3
  - (c) Explain with example :  
<UL> and <OL> tags in HTML 3
2. (A) Answer **any two** of the following :
- (a) Explain the following concept related to object oriented programming : 3
    - (i) Class
    - (ii) Inheritance
    - (iii) Polymorphism
  - (b) What is Record ? How it differs form Linear Array ? 3
  - (c) Explain in short the function of Menu Bar and Scroll Bar Component of GUI. 3
- (B) Answer **any one** of the following :
- (a) Explain context switching at a process level in multiprogramming system with example. 4
  - (b) What is Inheritance ? Explain any three type of inheritance with suitable diagram. 4
3. (A) Answer **any two** of the following :
- (a) Discuss Virus detection, removal and prevention phylosophies. 3
  - (b) Write the Binary search Algororithm with suitable example. 3
  - (c) Write any six features of object oriented programming. 3

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

(a) What is Binary Tree ? Draw the tree structure for the following expression :

$$Y = (A + B) / [(C * D + E)]$$

4

(b) Explain how records are represented in memory using array with suitable examples of four records and four fields.

4

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

(a) Explain in short the three main areas in which the operating system divide its services.

3

(b) Explain in short the three special characteristics of a static data member in a class.

3

(c) Explain 'Call by value' and 'Call buy reference' with suitable example.

3

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

(a) What is Linked List ? Explain a linked list with suitable example having six nodes with properly labeled diagram.

4

(b) State any eight basic rules for virtual function that satisfy the compiler requirement.

4

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

(a) Write a C++ program to find the smallest of five given integers using min() faction to return the smallest of five given integers.

5

(b) Implement a circle lass. Each object of this class will represent a circle accepting its radius value as of float. Evaluate an area() function which will calculate the area of circle.

5

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

5

		Year		
		1999	2000	2001
Sales	Units	300	750	1200
	Income	Rs. 3000	Rs. 7500	Rs. 12000

OR

5. (a) Write a C++ program to input 'n' elements in an one dimensional array and input one another number and check whether this number is present in the array or not.

5

(b) Write an OOP in C++ to find area of triangle  
(hint =  $a = \frac{1}{2} * b * h$ )

5



(c) Write HTML code for the following output :

5

- Science
  - ☐ Physics
  - ☐ Chemistry
  - ☐ Maths
  - ☐ Computer Science
- Arts
  - ☐ English
  - ☐ Marathi
  - ☐ Hindi
  - ☐ IT
- Commerce
  - ☐ Accounts
  - ☐ Auditing
  - ☐ Costing
  - ☐ IT

1000	2000	3000	4000
1000	2000	3000	4000
1000	2000	3000	4000
1000	2000	3000	4000