



BOARD QUESTION PAPER: MARCH 2025

Computer Science Paper - I

Time: 3 Hours**Max. Marks: 50****Instructions:**

- i. All questions are compulsory.
- ii. Figures to the right indicate full marks.
- iii. Use of any type of calculator not allowed.
- iv. Draw a neat diagram whenever necessary.

1. (A) Select the correct alternative and rewrite the following:
 - (a) _____ is variable that holds memory address of another variable. (1)
 - (i) Pointer
 - (ii) Array
 - (iii) Integer
 - (iv) Class
 - (b) Maximum number of nodes in a binary tree of depth 6 are _____. (1)
 - (i) 64
 - (ii) 63
 - (iii) 31
 - (iv) 127
 - (c) A program under execution which competes for CPU time and other resources is called _____. (1)
 - (i) Process
 - (ii) Context Switching
 - (iii) Multiprogramming
 - (iv) Memory Management
 - (d) Ability to takes more than one form is called _____. (1)
 - (i) Inheritance
 - (ii) Polymorphism
 - (iii) Class
 - (iv) Data binding
- (B) Answer **any two** of the following:
 - (a) What is Traversing an Array? Write algorithm for Traversing a linear array. (3)
 - (b) Enlist the basic data types used in C++ with size of data in terms of bytes for each. (3)
 - (c) Give any six features of Linux' Operating System. (3)
2. (A) Answer **any two** of the following:
 - (a) Write three advantages and disadvantages of HTML. (3)
 - (b) Explain following concepts related to object oriented programming: (3)
 - (i) Objects
 - (ii) Class
 - (iii) Data Encapsulation
 - (c) What is Record? How records are represent in memory using array? (3)
- (B) Answer **any one** of the following:
 - (a) Describe how member functions of class can be defined outside class definition and inside class definition. (4)
 - (b) Write the name of one operating system based on GUI. Explain any three components of GUI. (4)
3. (A) Answer **any two** of the following:
 - (a) What is Data Structure? Explain Linear and Non-linear data structure with examples. (3)
 - (b) Explain friend function in C++ with examples. (3)
 - (c) Define following process states in operating system: (3)
 - (i) Ready State
 - (ii) Running State
 - (iii) Block State



- (B) Answer **any one** of the following:
- What is Linked List? How linked list represent in memory? (4)
 - What is Operator Function? Describe the syntax of an operator function. Explain the difference between operator function as member function and friend function. (4)
4. (A) Answer **any two** of the following:
- Explain any three elements of security in operating system. (3)
 - Define following terms with respect to Binary Tree: (3)
 - Root node
 - Leaf
 - Binary Tree
 - What is Destructor? Write any four characteristics of destructor function. (3)
- (B) Answer **any one** of the following:
- What functions are performed by memory management of operating system? State any three memory management systems. (4)
 - What is Inheritance? Explain different types of Inheritance. (Any three) (4)
5. Answer **any two** of the following:
- Implement a class temperature to convert degree Fahrenheit value to degree Celsius value. (Hint: $C/5 = F - 32/9$) Where C is temperature in degree Celsius and F is temperature in Fahrenheit degree) (5)
 - Write a program in C++ to accept a positive integer and display it's multiplication table. (Hint: if n = 5, then 5, 10, 15, 20 50) (5)
 - Write an exact output of the following HTML code with font specifications in brackets: (5)


```
<HTML>
<body>
<UL>
<LI> Connectivity devices
<OL Type = "A" start = "5">
<li> modem </li>
<li> HUB </li>
</OL>
</LI> Topology
<UL Hpe = "circle">
</I> Bus Topology </LI>
<LI> Ring Topology </LI>
</UL>
</LI>
</UL>
</body>
</HTML>
```

OR

5. Answer **any two**:
- Write the HTML code for following table: (5)

Sales and Units

		Year		
		2020	2021	2022
Sales	Units	200	500	700
	Income	Rs. 20,000	Rs. 50,000	Rs. 70,000



(b) Write the HTML code for following:

(5)

HTML	– (Bold and Underline)
HTML is a Hyper Text Markup Language	
C++	– (Text is Red Colour)
C++ is a object oriented programming language	

(c) Write C++ program to add two integer numbers by using function call by value.

(5)

Target Publications