## December 2023
### B.Sc.(Chemistry) - 1 SEMESTER
### Computer - I (BCHT-MD-107)

**Time: 3 Hours**                                                    Max. Marks:75

**Instructions:**
1. *It is compulsory to answer all the questions (1.5 marks each) of Part -A in short.*
2. *Answer any four questions from Part -B in detail.*
3. *Different sub-parts of a question are to be attempted adjacent to each other.*

## PART -A

Q1 (a) What is a class? (1.5)

(b) What are unary operators? (1.5)

(c) What do you mean by polymorphism? (1.5)

(d) What is type-casting? (1.5)

(e) What are header files? (1.5)

(f) Differentiate between method overloading and overriding. (1.5)

(g) What is a friend function? (1.5)

(h) What is the significance of an abstract class? (1.5)

(i) Compare private, public and protected visibility modes. (1.5)

(j) What are command line arguments? (1.5)

## PART -B

Q2 (a) Differentiate between Object Oriented Programming and Procedure-Oriented Programming. (5)

(b) Explain various data types used in C++. (5)

(c) Compare the use of break and continue keywords. (5)

Q3 (a) What is data abstraction? How do we implement abstraction? (5)

(b) What do you mean by multi-level inheritance? Explain with the help of an example. (10)

Q4 Explain various control statements in C++ with the help of an example. (15)

Q5 (a) Differentiate between while and do-while loops. (5)

(b) Differentiate between call by value and call by reference. Write a program to swap the values of two variables using call be reference. (10)

Q6 (a) What is recursion? Write a C++ program to calculate factorial of a number using recursive function. (10)

(b) What are arrays? Write a C++ program to find the largest element in an array. (5)

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Q7    What are constructors and destructors? Explain various types of constructors.    (15)

## PART- A

Q1 (a)   What is a class?                                                                                    (1.5)
(b)   What are unary operators?                                                                        (1.5)
(c)   What do you mean by polymorphism?                                                      (1.5)
(d)   What is type-casting?                                                                                (1.5)
(e)   What are header files?                                                                              (1.5)
(f)   Differentiate between method overloading and overriding                          (1.5)
(g)   What is a friend function?                                                                          (1.5)
(h)   What is the significance of an abstract class?                                            (1.5)
(i)   Compare private, public and protected visibility modes                            (1.5)
(j)   What are command line arguments?                                                          (1.5)

## PART- B

Q2 (a)   Differentiate between Object Oriented Programming and Procedure-Oriented    (5)
        Programming
(b)   Explain various data types used in C++                                                    (5)
(c)   Compare the use of break and continue keywords                                    (5)

Q3 (a)   What is data abstraction? How do we implement abstraction?                 (5)
(b)   What do you mean by multi-level inheritance? Explain with the help of an    (10)
        example.

Q4        Explain various control statements in C++ with the help of an example      (15)

Q5 (a)   Differentiate between while and do-while loops                                      (5)
(b)   Differentiate between call by value and call by reference. Write a program to    (10)
        swap the values of two variables using call by reference.

Q6 (a)   What is recursion? Write a C++ program to calculate factorial of a number    (10)
        using recursive function.
(b)   What are arrays? Write a C++ program to find the largest element in an array    (5)