C++ Practice Questions

1. Create a class Donor that contains donor number, donor name, age, address, gender and blood group. Write a menu driven C++ program to display the number ,name and address of the donors for the following categories.
2. Blood donors having the blood group O+ve
3. blood donors in the age group between 18 to 25.
4. female donors having blood group A +ve in the age between 21 and 24.
5. Create a class Integer and overload below operators. Interger class have two interger type variables as data members.
6. Write default Constructor parameterized constructors
7. Write getter and setter functions for class Integer
8. Overload +(binary operator),++(pre),++(post),==(comparison)
9. Write Display function which will display that number.
10. Imagine a publishing company that markets both books and audio cassette versions of its works Create a class publication that stores the title (a string) and price (type float) of a publication. From this class derive two classes: BOOK, which adds a page count (type int) and TAPE, which adds a length count (type int). Each of these three classes should have a getdata() function too get its data from the user at the keyboard, and a putdata( ) function to display its data.

Write a main () program to test the book and tape classes by creating instances of them, asking the user to fill in their data with getdata() and then displaying the data with putdata().

# Consider the following hierarchy along with suggested data members of classes:

Book no, ISBN no, Title, publisher

**Book**

**Edited Book**

**Text Book**

Editor Name, Number of articles

First Author

# Design and implement the classes in the hierarchy using C++. You may add more data members in the classes, if needed.Include at least one constructor of each class in your Implementation. Also implement a function display-book-info ( ) that displays all the information of related object. Write appropriate main ( ) function such that it, Demonstrates polymorphism while using function display-book-info ( ).

# Write a Program to Overload Area () function to calculate area of Circle, Rectangle, Square.

# (No need to take any class) can perform overloading within main() function.

# Create a class called employee that contains a name and an employee number. Include a member function called getdata () to get data from the user, another function called putdata () to display the data. Write a main() program to exercise this class. It should create an array of type employee and then invite the user to input data for n employees.

# Write a C++ program to overload Max () function which will do below tasks.

# Find max of two numbes.

# Find max from array

# Define a class name Clock with three integer data members for hours, minutes and seconds. Perform below operations

# Write no argument and parametrized constructor.

# Overload below operators

# Binary (+) operator to add two Clock Objects.

# Unary (++) pre increment operator to increment values of hours, minutes and seconds.

# Display () function to display all the data.

# Write a program to facilitate user to handle any chance of divide by zero exception.

# Consider the following hierarchy along with suggested data members of classes:

Member id, name, Date of membership

**Member**

**Permanent Member**

**Temporary member**

Discount percentage

Membership fees due on

# Design and implement the classes in the hierarchy using C++. You may add more data members in the classes, if needed.

# You should include at least one constructor in each class. All the classes should have a member function print\_member\_info ( ) which prints all the data of an object of that class. You must demonstrate polymorphism using print\_member\_info ( ) and appropriate main ( ) function.

1. Write a program to write a class Array which can handle integers for 1-D.

Which contains two things int \*arr,size;

Implement below functionalities.

1. Write no argument and paramterized constructors.(that will allocate memory on heap to array).
2. Write destructor.
3. Create two objects of an array and add them.
4. Write a program for developing matrix class which can handle integer matrices of different dimensions. Also overload the operator for + and \* and Comparison of matrices.

Take pointer to pointer as int \*\*mat; then write below functionalities

1. No argument constructor to allocate memory for 2-D array.
2. Write accept() and display () functions.
3. Overload +,\* and == opeartors.
4. Create a class called Musicians to contain three methods string ( ), wind ( ) and perc ( ).

Each of these methods should initialize a string array to contain the following instruments

* veena, guitar, sitar, sarod and mandolin under string ( )
* flute, clarinet saxophone, nadhaswaram and piccolo under wind ( )
* tabla, mridangam, bangos, drums and tambour under perc ( ) .

It should also display the contents of the arrays that are initialized.

Create a derived class called TypeIns to contain a method called get ( ) and show ( ).

The get ( ) method must display a means as follows:

1. Type of instruments to be displayed

• String instruments

• Wind instruments

• Percussion instruments

Show( ) method should display the relevant detail according to our choice. The base class variables must be accessible only to its derived classes.

1. Create a class called Font which includes the following details: Fontname(string:min 4 char, max 24 char), Fontsize(float:non-negative, non-zero,max 64) , Fontcolor (string: min 4 char , max 24 char), Bold(bool), Underline(bool), Italic(bool).

Write suitable constructors. Use the below mentioned values for Default Constructor. Write copy constructor and parameterized constructors.

(a). Fontsize:12 (b). Fontcolor : black (c)Bold , Underline , Italic : false

Implement the functions for:

• Overload ++ and -- Size increment /decrement by 1 unit.

• Set/Reset the underline, italic and bold(setter method).

• Checking the status of the bold is and underline attribute. (getter method )

• Suitable accessor functions which will access color.(getter method).

1. Implement the class Insurance\_Policy, whose data members are PolicyId( int: non-negative, non-zero), PolicyHolder\_Name(string: min 4, max 20), Amount(double: non-zero, non-negative, max 2,50,000).

Create default and parameterized constructors, getters/setter functions for each attribute.

Implement a menu driven program to perform below operations –

A. Accept()

B. Display()

C. Exit

1. Write a Template function to add two integers, two doubles, and two float values.
2. Write a Template function to find maximum of two Integers numbers and two float numbers.
3. Write a Class A and Class B with one data member of integer type and exchange their values using Friend.(class A contains 1 integer and Class b contains one integer )
4. An electricity board charges the following rates to domestic users:

For the first 100 units – 50P per unit

For next 200 units – 70P per unit

Beyond 300 units – 80P per unit

All users are charged a minimum of Rs.60.00. if the total amount is more than Rs.350.00 than an additional surcharge of 10% is added. Write a C++ program to read the names of users and number of units consumed and print out the charges with names.

20.Create a Complex class that has real(int) and img(int) as member data, and has getData and showData functions.

Then also overload the following operators for Complex class. =, ==, +, ++, --, <>

Write a main program that tests the above class.