11	Write C++ code for below mentioned tasks? **Task-11.1** Inheritance Basics: WAP in C++ to create a Parent and Child interaction using inheritance. With this Parent and Child Interaction try to perform these tasks: a. Call Parent class method in child class function without creating an object of parent class b. Call Parent class method in main method by child class object **Task-11.2** Multiple Inheritance in C++: Create two classes named Mammals and MarineAnimals. Create another class named BlueWhale which inherits both the above classes. Now, create a function in each of these classes which prints "I am mammal", "I am a marine animal" and "I belong to both the categories: Mammals as well as Marine Animals" respectively. Now, create an object for each of the above class and try calling 1 - function of Mammals by the object of Mammal 2 - function of MarineAnimal by the object of MarineAnimal 3 - function of BlueWhale by the object of BlueWhale 4 - function of each of its parent by the object of BlueWhale **Task-11.3** Dimond Problem in multiple inheritance using C++: a. WAP to illustrate Dimond Problem in multiple inheritance b. its solution using Virtual base classes. Write separate programs if required. c. What else multiple inheritance can cause in a program, explain it by providing proper solution	
12	Write C++ code for below mentioned tasks? **Task-12.1** WAP to illustrate the role of Access Modifiers [private, public, protected] separately in: a. Accessing base class elements in derived class or Inheritance b. Accessing base class elements through object **Task-12.2** Execution flow of Constructors and Destructors in C++: a. WAP to illustrate the calling and execution flow of Constructors in inheritance. [L-2 Inheritance] b. WAP to illustrate the calling and execution flow of Destructors in inheritance. [L-2 Inheritance] c. Pass parameters to base class through derived class constructor. [L-1 Inheritance]	

13	Write C++ code for below mentioned tasks? **Task 13.1** To overload add method for two parameters with int and float data types in Base class. Along with it create a Derived class from the Base class named as child. The class child should override one of the overloaded method from base class. Perform following tasks: 1. Try calling overriding method from child class object. 2. Write name of the method which is not seen by the child class object Create two versions: version 01: without 'using' keyword version 02: with 'using' keyword **Task 13.2** Base class having a virtual and a pure virtual function. Derived class having same copy of virtual function with changed logic and definition of pure virtual function. Perform following tasks: 1. Try to call child class overriding method from base class pointer. 2. Try to call child class definition of pure virtual function in child class. 3. Find out the abstraction in above implementation.	
14	Write C++ code for below mentioned tasks? **Task 14.1** Illustrate the compile time and run time binding using base class pointer, which holds the address of child class **Task 14.2** Perform the following: 1. Call base class destructor from base class pointer which is holding the child class object. 2. Call child class destructor from base class pointer which is holding the child class object.	
15	Write C++ code for below mentioned tasks? **Task 15.1** WAP in C++ to read and write from and to a file using ifstream and ofstream**.** **Task 15.2** WAP in C++ to perform these tasks: a. Read from a file using fstream [char by char] b. Write into a file using fstream c. Append into a file using fstream d. Count total number of characters, words and lines in a file **Task 15.3** WAP in C++ for IO manipulators mentioned below: a. **IOS:** hex,dec,skipws,noskipws b. **Istream:** ws	

	c. **Ostream:** endl, ends, flush d. **Iomanip:** setW, setPrecision	

16	Write C++ code for below mentioned tasks?
	
	Task 16.1 WAP in C++ to create a genetic add function for given tasks:
	a. Perform add over two integers and return integer
	b. Perform add over one int and one float and return double
	
	Task 16.2 WAP in C++ to perform these tasks:
	a. Catch a Divide by zero exception in z = x/y using **"throw runtime_error"**
	
	b. What will be the output of this program and why?
	`#include <iostream>`
	`using namespace std;`
	
	`int main()`
	`{`
	`try {`
	`throw 'a';`
	`}`
	`catch (int x) {`
	`cout << "Caught " << x;`
	`}`
	`catch (...) {`
	`cout << "Default Exception\n";`
	`}`
	`return 0;`
	`}`
	c. What will be the output of this program and why?
	`#include <iostream>`
	`using namespace std;`
	
	`int main()`
	`{`
	`try {`
	`throw 'a';`
	`}`
	`catch (int x) {`
	`cout << "Caught ";`
	`}`
	`return 0;`
	`}`
	d. Rethrow and catch an exception by creating a separate user defined divide function for condition divide by zero.	

17	**WAP in C++ with the help of STL:** a. **List:** 1. Iterate a int list using iterator and print it 2. Find size of a list 3. Sort a list 4. Reverse a list **b. Vector:** 1. Insert elements into a int vector 2. Iterate this vector using iterator and print it 3. Find size of a capacity and max size of a vector 4. Resize a vector 5. checks if the vector is empty or not **c. Map:** 1. Insert elements into a <int, string> map 2. insert elements in random order 3. Iterate this map using iterator and print its keys and values 4. Find an element as key from this map 5. assigning the elements from map1 to map2 6. remove all elements with key = x (any key present in map) 7. Find size, max size of a map 8. checks if this map is empty or not 9. Clear a map **d. Algorithm:** 1. Covert an Array into a Vector 2. Sort a Vector 3. Reverse a vector 4. Max element in a Vector 5. Min element in a Vector 6. Occurrences of x in a vector 7. Sort an Array 8. Binary Search in an Array	