**LAB PRACTICAL QUESTIONS (Object Oriented Programming)**

**Question No 1 (Default Argument)**

1. Write the prototype and header for a function called compute. The function should have three parameters: an int, a double, and a long (not necessarily in that order). The int parameter should have a default argument of 5, and the long parameter should have a default argument of 65536. The double parameter should not have a default argument. Write the function body by returning the sum of all values from function. Implement this function in main by calling the function in as many ways as possible (such as passing two parameters, one parameter, without parameter etc).
2. Write the prototype and header for a function called calculate. The function should have three parameters: an int, a reference to a double, and a long (not necessarily in that order.) Only the int parameter should have a default argument, which is 47. Implement this function in main by calling the function in appropriate ways.

**Question No 2 (Function Overloading)**

Write a program that computes and displays the charges for a patient’s hospital stay. First, the program should ask if the patient was admitted as an in-patient or an out-patient.

If the patient was an in-patient the following data should be entered:

**•** The number of days spent in the hospital

**•** The daily rate

**•** Charges for hospital services (lab tests, etc.)

**•** Hospital medication charges.

If the patient was an out-patient the following data should be entered:

**•** Charges for hospital services (lab tests, etc.)

**•** Hospital medication charges.

The program should use two overloaded functions to calculate the total charges. One of the functions should accept arguments for the in-patient data, while the other function accepts arguments for out-patient data. Both functions should return the total charges.

*Input Validation: Do not accept negative numbers for any information.*

**Question No 3**

1. Write a class declaration for a class named Circle, which has the data member radius, a double, and the following member functions: setRadius and getArea. Write the code for these as inline functions.
2. Write a class declaration for a class named Pizza that has the data members price, a double, and size, a Circle object (declared in above question a). It also has member functions: setPrice, setSize, and costPerSqIn. Write the code for these as inline functions.

Write 4 lines of code that might appear in a client program using the Pizza class to do the following:

1. Define an instance of the Pizza class named myPizza.
2. Call a Pizza function to set the price.
3. Call a Pizza function to set the size (i.e., the radius).
4. Call a Pizza function to return the price per square inch and then print it.

**Question No 4**

1. Write a class declaration for a class named Rectangle, which has the data member length, a double, and Width, a double with the following member functions: setLength and setWidth, getArea. Write the code for these as inline functions.
2. Write a class declaration for a class named Carpet that has the data members pricepersqft, a double, and size, a Rectangle object (declared in above question a). It also has member functions: setPricepersqft, setDimenstions that sets both length and width, and getTotalPrice. Write the code for these as inline functions.

Write 4 lines of code that might appear in a client program using the Pizza class to do the following:

1. Define an instance of the Carpet class named purchase.
2. Call a Carpet function to set the pricepersqft.
3. Call a Carpet function to set the dimension (i.e., the length and width of Rectangle size).
4. Call a Carpet function to return the total price of carpet by (multiplying area and pricepersqft and then print it.