SCS 1310 - Object Oriented Programming
Tutorial 10

1. Explain the output of the following code.

```cpp
#include<iostream>

using namespace std;
class Base1 {
 public:
    Base1()
    { cout << " Base1's constructor called" << endl;  }
};

class Base2 {
 public:
    Base2()
    { cout << "Base2's constructor called" << endl;  }
};

class Derived: public Base1, public Base2 {
  public:
    Derived()
    { cout << "Derived's constructor called" << endl;  }
};

int main()
{
   Derived d;
   return 0;
}
```

2. Write a C++ code which exhibits multilevel inheritance.

3. Run the following code. If there is an error do the proper changes to the code.

```cpp
#include<iostream>
using namespace std;

class Base
{
public :
   int x, y;
public:
   Base(int i, int j){ x = i; y = j; }
};

class Derived : public Base
{
public:
   Derived(int i, int j):x(i), y(j) {}
   void print() {cout << x <<" "<< y; }
};

int main(void)
{
   Derived q(10, 10);
   q.print();
   return 0;
}
```

4. Write and explain a code which shows diamond problem in multiple inheritance.

5. 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