Lab. (10)
Classes and Objects

Answer the following questions

Question One:
Write a program to illustrate the working of objects and class in C++

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

//create a class
class Room{

  public:
   double length;
   double breadth;
   double height;

   double calculateArea (){
      return length * breadth;
   }

   double calculateVolume} ()
      return length * breadth * height;
}
};

int main} ()

 //   create object of Room class
   Room room1;

 //   assign values to data members
   room1.length = 42.5;
   room1.breadth = 30.8;
   room1.height = 19.2;

 //   calculate and display the area and volume of the room
   cout << "Area of Room =  " << room1.calculateArea() << endl;
   cout << "Volume of Room =  " << room1.calculateVolume() << endl;
   return 0;
}
```

Question Two:
Write a C++ program to demonstrate accessing of data members

```cpp
#include <iostream<
using namespace std;
class Phone {
public:
        double cost   ;
        int slots ;
};
int main} ()
        Phone Y6      ;
        Phone Y7      ;

        Y6.cost = 100.0;
        Y6.slots = 2;

        Y7.cost = 200.0;
        Y7.slots = 2;
        cout << "Cost of Huawei Y6 : " << Y6.cost << endl;
        cout << "Cost of Huawei Y7 : " << Y7.cost << endl;

        cout << "Number of card slots for Huawei Y6 : " << Y6.slots << endl;
        cout << "Number of card slots for Huawei Y7 : " << Y7.slots << endl;

        return 0;
}
```

Question Three:
Write a C++ program to demonstrate a function is to be defined outside a class definition

```cpp
#include <iostream>
#include <string>
using namespace std;
class Guru99
{
public:
        string tutorial_name;
        int id;
        void printname;()
        void printid()
        }
                cout << "Tutorial id is: "<< id;
        }
};
void Guru99::printname()
{
        cout << "Tutorial name is: " << tutorial_name;
}
int main (){
```

```cpp
        Guru99 guru99;
        guru99.tutorial_name = "C++";
        guru99.id = 1001;
        guru99.printname();
        cout << endl;
        guru99.printid();
        return 0;
}
```

Question Four:
Write a program to use a Simple Class to calculate the area of rectangle in C++

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

class Rectangle {
    int width, height;
  public:
    void set_values (int,int);
    int area() {
        return width*height};
};

void Rectangle::set_values (int x, int y){
 width = x;
 height = y;
}

int main () {
 Rectangle rect;
 rect.set_values (3,4);
 cout << "area: " << rect.area();
 return 0;
}
```

Question Five:

Write a program to use a Simple Class to calculate the area of rectangle in C++ with two objects

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

class Rectangle {
    int width, height;
  public:
    void set_values (int,int);
    int area () {return width*height};
};

void Rectangle::set_values (int x, int y){
 width = x;
 height = y;
}

int main} ()
 Rectangle rect, rectb;
 rect.set_values (3,4);
 rectb.set_values (5,6);
 cout << "rect area: " << rect.area() << endl;
 cout << "rectb area: " << rectb.area() << endl;
 return 0;
}
```