Lab. (11)
Classes and Objects - 2

Answer the following questions

Question One:
Write a program to use a Simple Class to add two integers in C++
#include <iostream>
#include<conio.h>

using namespace std;

 //Addition Class Declaration
class AdditionClass {
private: //Access - Specifier
//　Member Variable Declaration
   int num1, num2, result;

public: //Access - Specifier
//　Member Functions read(),sum() and print() Declaration

   void read (){
//　　Get Input Values For Object Variables using cin
     cout << "Enter Number 1;":
     cin >> num1;

     cout << "Enter Number 2;":
     cin >> num2;
   }

   void sum (){
 //　　Calculating sum value and assign in 'result'
     result = num1 + num2;
   }

   void print} ()
//　　Print the Output using cout
     cout << "Result :" << num1 << " + " << num2 << " = " << result << endl;
   }
};

int main (){
 //　Object Creation For Class
   AdditionClass obj1, obj2;

```cpp
    cout << "Simple Class Addition : Add Two Integers In C++\n;"

    cout << "\nAdditionClass : obj1 Usage" << endl;
    obj1.read;()
    obj1.sum;()
    obj1.print;()

    cout << "\nAdditionClass : obj2 Usage" << endl;
    obj2.read;()
    obj2.sum;()
    obj2.print;()

    getch;()
    return 0;
}
```

Question Two:

Write a program to use a Simple Class to Read and Print Student Information Class in C++

```cpp
 //Header Files
#include <iostream>
#include<conio.h>

using namespace std;

 //Student Class Declaration
class StudentClass {
private:                         //Access - Specifier
//   Member Variable Declaration
  char name[20];
  int regNo, sub1, sub2, sub3;
  float total, avg;

public:                          //Access - Specifier
//   Member Functions read() and print() Declaration

  void read} ()
//     Get Input Values For Object Variables
    cout << "Enter Name;":
    cin >> name;

    cout << "Enter Registration Number;":
    cin >> regNo;

    cout << "Enter Marks for Subject 1,2 and 3;":
    cin >> sub1 >> sub2>> sub3;
  }

  void sum (){
    total = sub1 + sub2 + sub3;
```

```cpp
        avg = total / 3;
    }

    void print} ()
//      Show the Output
        cout << "Name :" << name << endl;
        cout << "Registration Number :" << regNo << endl;
        cout << "Marks :" << sub1 << " , " << sub2 << " , " << sub3 << endl;
        cout << "Total :" << total << endl;
        cout << "Average :" << avg << endl;
    }
};

int main (){
 //  Object Creation For Class
    StudentClass stu1, stu2;

    cout << "Read and Print Student Information Class Example Program In C++\n;"

    cout << "\n StudentClass : Student 1" << endl;
    stu1.read();
    stu1.sum();
    stu1.print();

    cout << "\nStudentClass : Student 2" << endl;
    stu2.read();
    stu2.sum();
    stu2.print();

    getch();
    return 0;
}
```

Question Three:
Write a program to use a simple class example program for find prime number in C++

```cpp
#include<iostream>
#include<conio.h>

using namespace std;

 //Class Declaration

class prime {
//   Member Variable Declaration
    int a, k, i;
public:

    prime(int x){
        a = x;
    }
```

```cpp
//   Object Creation For Class

  void calculate (){
     k = 1;
}
        for (i = 2; i <= a / 2; i(++
           if (a % i == 0} (
              k = 0;
              break;
 {          else {
              k = 1;
           }
      }
   }

  void show (){
     if (k == 1(
        cout << "\n" << a << " is Prime Number;".
     else
        cout << "\n" << a << " is Not Prime Numbers;".
  }
};
```

```cpp
int main (){
   int a;
   cout << "Enter the Number;":
   cin>>a;

//   Object Creation For Class
   prime obj(a);

//   Call Member Functions
   obj.calculate;()
   obj.show;()
   getch;()
   return 0;
}
```

Question Four:
Write a program to use a simple constructor in outside class declaration in C++
//Header Files
#include <iostream>
#include<conio.h>

using namespace std;

//Class Declaration

```cpp
class Example {
  int a, b;
// Access - Specifier
public:
// Constructor declaration
  Example();

// Member Functions for display 'a & b' Values.

  void Display (){
    cout << "Values :" << a << "\t" << b;
  }
};

//Constructor definition outside Class
Example::Example (){
// Assign Values In Constructor
  a = 10;
  b = 20;
  cout << "Im Constructor : Outside Class\n;"
}

int main (){
  cout << "Simple Constructor Outside Class Declaration Example Program In C++\n;"

// Object Creation For Class
  Example Object;
// Constructor invoked.
  Object.Display();

// Wait For Output Screen
  getch();
  return 0;
}
```

Question Five:
Write a program to use a factorial using function example program in C++

```cpp
#include<iostream<
#include<conio.h<

using namespace std;

//Function
long factorial(int);

int main (){

// Variable Declaration
```

```cpp
    int counter, n;

// Get Input Value
    cout << "Enter the Number;":
    cin>>n;

// Factorial Function Call
    cout << n << " Factorial Value Is " << factorial(n);

// Wait For Output Screen
    getch();
    return 0;
}

//Factorial Function

long factorial(int n) {
    int counter;
    long fact = 1;

// for Loop Block
    for (int counter = 1; counter <= n; counter++){
        fact = fact * counter;
    }

    return fact;
}
```