King Abdulla II School for Information Technology
Computer Science Department
C++ Second Exam

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Section:
Instructor:

Question 1 (10 points) What is the output for each of the following programs? If the program results in an infinite loop, write **(INF)** in the box next to it. Assume all necessary libraries are included. **Note: There is no syntax errors in the codes**

1. (3 Points)

```
int n=10;
void f1(int);
void f2(int&);
void main()
{
      f1(5);
      int n=2;
      f2(n);
      cout<<n<<endl;
}
void f1(int n)
{
      cout<<n<<endl;
}
void f2(int& x)
{
      cout<<n<<endl;
      n++;
}
```

2
10
10

2. (2 Points)

```
int n=3;
void main()
{
      while(n++ <= 3);
            cout<<n<<endl;
      cout<<n<<endl;
      {
            int n=5;
            cout<<n++<<endl;
      }
      cout<<n-1<<endl;
}
```

3
3
6
2

3. (2 Points)

```
void main()
{
      int x=5;
      while(x = 3)
            for(int i=1;i<=2;i++)
                  if(i == 2 % x)
                        break;
                  else
                  {
                        cout<<x<<endl;
                        continue;
                  }
      cout<<x<<endl;
}
```

5

4. (2 Points)	`int f1(int x=1, int y=2);`
	`int f2(int);`
	`void main()`
	`{`
	`int n=5;`
	`do`
	`{`
	`if(f1(n))`
	`cout<<1<<endl;`
	`}`
	`while(0);`
	`cout<<f1()<<endl;`
	`cout<<f1(n, 10)<<endl;`
	`}`
	`int f1(int x, int y)`
	`{`
	`return f2(x)/f2(y);`
	`}`
	`int f2(int a)`
	`{`
	`return a%4;`
	`}`	

5. (1 Point)	`int x=10;`
	`void f(int&);`
	`void main()`
	`{`
	`f(x);`
	`cout<<x<<endl;`
	`}`
	`void f(int& n)`
	`{`
	`x++;`
	`n++;`
	`}`	

Question 2 (10 points) Write a complete C++ program which consists of two functions **main** and **RectangleArea**.

main: Reads **width** and **length** of a rectangle, passes them to RectangleArea function, and prints the area returned from RectangleArea. If the user inputs negative values, your code should print this message to the user "**INPUT ERROR**" and ask the user to reenter the values.

RectangleArea: Computes and returns the rectangle area calculated as: area = width * length.

```
Sample run:
Enter rectangle width: 4.8
Enter rectangle length: -2.0
INPUT ERROR
Enter rectangle length: 2.0
Area = 9.6
```

Use this paper sheet to answer **Question 2:**

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

int RectangleArea(double w, double l);
int Area = 0;
void main()
{
    cout << "Enter rectangel width" << endl;
    cin >> w
    cout << endl << "Enter rectangle length" <<
        endl;
    cin >> l;

    RectangleArea( w, l )
    cout Area endl;
}
RectangleArea(double w, l )
{
    return
    Area = w * l;
}
```

```
# include <iostream>
# include <cmath>
Using name space std;
 Double Area=0;
  Double RectangleArea( Double w, Double l); 1
  Void Main( )
   {
        RectangleArea(w, l );
        Cout>>"Area is>>Area;
   }
  RectangleArea( w , l )
  {
      while ( w >= 1 )
     {Cout<<" Enter Width"<<endl;
      Cin>> w
     }
     While(l >= 1)
      { Cout<<Enter length"<< endl;
        Cin>>l
       }
      return
      Area = w*l;
  }
```