Midterm 1-Semester II-2019
CSC115-Programming in C++
15 Marks

King Saud University
جـــامـــعـــة الملك سعود
1957

Student ID:

Student Name:

Question1	**Question 2**
Question 3	**Question 4**

Question 1 (5 Marks)

A. What does the following code fragment write to the monitor?

```
int x = 5, y = 7;
  if (! (x< y))
     cout << "x does not equal y";
  else
     cout << "x equals y";
```
[a] x does not equal y   [b] x equals y

B. Which of the following is a correct comment?

[a] */ Comments */   [b] ** Comment **
[c] /* Comment */   [d] { Comment }

C. Which looping process checks the test condition at the end of the loop?

    [a] for loop
    [b] while loop
    [c] do-while loop
    [d] no looping process checks the test condition at the end

---

D. Find the output of the following code:

```
int main()
{
int x=2,y=3,z=4;
y+=x++;
z-=--y;
cout<<x<<","<<y<<","<<z;
return 0;
}
```

[a] 3,4,0
[b] 2,5,3
[c] 2,3,4
[d] 3,4,4

E. Find the out of the following code:
```
int main()
{
 int x=2,y=3;
cout<<x*y%4+11/x-y;
return 0;
}
```
[a] -9
[b] 4
[c] 13
[d] 35

Question 2 (2.5 Marks)
Write a program that gives **the maximum** of three positive integers.

Sample Run:
```
Enter number 1 :15
Enter number 2 :70
Enter number 3 :23

The maximum of these numbers is: 70
```

```cpp
#include <iostream>
using namespace std;
int main()
{
   int i=1,x,max=0;
   for(i=1;i<=3;i++)
   {
      cout<<"Enter number " <<i<<" :";
      cin>>x;
      if (x>max)
      max=x;
   }
   cout<<"\n The maximum of these
numbers is: "<<max;
   return 0;
}
```

Student ID:

Student Name:

Question 3 (2.5 Marks)
Using the **loop** of **for**, write a program that computes the sum of all odd integers between 0 and 100.

```cpp
#include <iostream>
using namespace std;
int main()
{
    int i,s=0;
    for(i=1;i<=100;i=i+2)
    s=s+i;
    cout<<"\n The sum of all odd integers
between 0 to 100 is: "<<s;
    return 0;
}
```

```
The sum of all odd integers between 0 to 100
is: 2500
```

Question 4: (5 Marks)
Write a program that allows you to do operations on an integer. The program displays the value of the integer and then displays the following menu:

1. Add 1;

2. Multiply by 2;

3. Subtract 4;

4. Exit

The program then asks to choose an integer between 1 and 4. If the user types a value between 1 and 3, we perform the operation; we display the new value of the integer then redisplay the menu and so on until 4. When you type 4, the program ends.

The purpose of this exercise is to check the following technical points: use of **do- while** and the **switch**;

Sample Run:
```
Enter a value of x= 45
1 : Add 1
2 : Multiply by 2
3 : Subtract 4
4 : Exit
Your choice is : 2
The new value of x is : 90
1 : Add 1
2 : Multiply by 2
3 : Subtract 4
4 : Exit
Your choice is : 1
The new value of x is : 91
1 : Add 1
2 : Multiply by 2
3 : Subtract 4
4 : Exit
Your choice is : 4
------------------------------------------
```

```cpp
#include <iostream>
using namespace std;
int main()
{
 int x,choice;
    cout<<"Enter a value of x :=" ;
    cin>>x;
do
{
    cout<<"1: Add 1"<<endl;
    cout<<"2: Multiply by 2"<<endl;
    cout<<"3: Subtract 4"<<endl;
    cout<<"4: Exit"<<endl;
    cout<<"Your choice is : ";
    cin>>choice;
    switch(choice)
    {
    case 1: x++;break;
    case 2:x*=2;break;
    case 3: x-=4;break;
    }
cout<<"\n The new value of x is: "<<x<<endl    ;
}
while(!(choice==4));
    return 0;
}
```