

King Saud University

College of Computer and Information Sciences
Computer Science Department

		Course Code:	CSC 111
		Course Title:	Introduction to Programming 1
		Semester:	Fall 2017-18
		Exercises Cover Sheet:	Mid 2 Exam (Form A)
		Duration: 90 min	
Student Name:			
Student ID:			
Student Section No.			
Tick the Relevant	Computer Science B.Sc. Program ABET Student Outcomes	Question No. Relevant Is Hyperlinked	Covering %
✓	a) Apply knowledge of computing and mathematics appropriate to the discipline;	1,2	50%
	b) Analyze a problem, and identify and define the computing requirements appropriate to its solution;		
	c) Design, implement and evaluate a computer-based system, process, component, or program to meet desired needs;		
	d) Function effectively on teams to accomplish a common goal;		
	e) Understanding of professional, ethical, legal, security, and social issues and responsibilities;		
	f) Communicate effectively with a range of audiences;		
	g) Analyze the local and global impact of computing on individuals, organizations and society;		
	h) Recognition of the need for, and an ability to engage in, continuing professional development;		
✓	i) Use current techniques, skills, and tools necessary for computing practices.	1,2	50%
	j) Apply mathematical foundations, algorithmic principles, and computer science theory in the modeling and design of computer-based systems in a way that demonstrates comprehension of the tradeoffs involved in design choices;		
	k) Apply design and development principles in the construction of software systems of varying complexity;		

Question 1. (6 Marks)

Put your answers of question 1 (multiple choice questions) in the following table:

Question	Answer
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	

1) Which of the following is not nested loop?

- a)

```
for(i=0;i<10;i++)
    for(j=1;j<i+2;j++)
```
- b)

```
for(i=0;i<10;i++)
    System.out.println(i);
    for(j=1;j<i+2;j++) System.out.println("j="+j);
```
- c)

```
for(i=0;i<10;i++)
    while(j%2==0){ System.out.println(j+" "+(++j));}
```
- d)

```
for (i=0; i<10,i++){
System.out.println(i)
for(j=1;j<i+2;j++) System.out.println("j="+j); }
```

2) Which for loop is equivalent to the following while loop

```
x=10;
while(x>1){
    System.out.println(x+" ");
    --x;
}
```

- a)

```
for(x=10;x>1;x--){System.out.println(x+" ");}
```
- b)

```
for(x=10;x>=1;x--){System.out.println(x+" ");}
```
- c)

```
for(x=10;x>=1;--x){System.out.println(x+" ");}
```
- d)

```
for(x=10;x>=0;--x){System.out.println(x+" ");}
```

3) What values of j and k will make this program print hello?

```
int j = ---;
int k = ---;
for (int i = j; i > k; i--) {
    j++;
    System.out.println("hello");
}
```

- a) j = 1, k = 2
- b) j = 3, k = 2
- c) j = 2, k = 4
- d) j = 5, k = 5

4) Consider the following code segment:

```
int x = 1, y = 6;
while (y--){
    x++;
}
System.out.println("x = " + x + " y = " + y);
```

Which statement is true?

- a) x = 6 y = 0
- b) x = 7 y = 0
- c) x = 6 y = -1
- d) There is a compilation error.

5) Which of the pattern is produced by the following code?

```
int i, j, k;
for (i = 1; i <= 7; i++) {
    for (j = 1; j <= i; ++j)
        System.out.print(i);
    for (k = 7 - i; k >= 1; k--)
        System.out.print(j);
    System.out.println(" ");
}
```

a)	b)	c)	d)
1	1111111	1222222	1
21	1222222	2233333	12
321	1233333	3334444	123
4321	1234444	4444555	1234
54321	1234555	5555566	12345
654321	1234566	6666667	123456
7654321	1234567	7777777	1234567

6) How many times will the following code print "Week_end"?

```
int count = 10;
while (count-- >= 10) {
    System.out.println("Week_end");
    count+=1;
}
```

- a) 8
- b) 9
- c) 10
- d) Infinite loop

7) Given following class:

```
public class Test {
    public static void main(String args[]) {
        int x=10, y=100, s=0;
        for(int x=0; x<=y; x+=10)
            s+=x;
        System.out.println("s = " + s);
    }
}
```

Which statement is true?

- a) This class prints "s = 0"
- b) This class prints "s = 100"
- c) This class prints "s = 550"
- d) There is a compilation error.

8) This code will not compile. What is wrong with it?

```
int a = 0, b = 0;
for (int i = 0; i < 5; i++) {
    if (++a > 2 || ++b > 2) {
        a++;
    }
}
System.out.println("a=" + a + " b=" + b);
System.out.println("Value of i after completion of loop: "+
i);
```

- a) loop counter i is not initialized
- b) loop counter i should be declared before the loop
- c) loop counter i is initialized to zero
- d) loop counter i is not updated inside the loop

9) What will be the output of the following code?

```
public class Test {
    public static void main(String args[]) {
        char c = 'b';
        switch (c)
        {
            case 'a': System.out.print("1");
            case 'b': System.out.print("2");
            case 'c': System.out.print("3");
        }
        System.out.println("Done");
    }
}
```

- a) Done
- b) 1Done
- c) 23Done
- d) 123Done

10) Suppose you have the following class:

```
class Point {
    public int x, y;
    public int getX() { return this.x*2%3; }
    public int getY() { return this.y-2; }}
```

What is the output of the following code, if any:

```
public class PointTest {
    public static void main(String args[]) {
        Point p = new Point();
        p.x=2;
        System.out.println( p.getX());
    }
}
```

- a) 0
- b) 2
- c) 1
- d) There is a compilation error.

11) What is the output of this program?

```
class Calc {
    public void m1(int a, int b) {
        System.out.print( (a+b) + " " );
    }
    public double m2(int q, int p) {
        return p;
    }
}
public class Test{
    public static void main(String args[]) {
        Calc o = new Calc();
        o.m1(2,3);
        System.out.print( o.m2(2,3) );
    }
}
```

- a) 5 3.0
- b) 2 3.0
- c) 3.0 2.0
- d) There is a compilation error.

12) Consider the following code segment:

```
switch(x)
{
    default: System.out.println("Hello");
}
```

Which data type is acceptable for x?

- a) long
- b) char
- c) float
- d) double

Question 2. (4 Marks)

A) What is the output of the following program? (2 marks)

```
class Class {
    private int x=2,y=5;
    public void print(String c) {
        System.out.println( "x="+x+" ,y="+y );
    }
    public void update(){
        y=pow(x);
    }
    public void setX(int a){
        x=a;
    }
    public int getX(){
        return x;
    }
    private int pow(int a){
        return a*a;
    }
}
public class Test{
    public static void main(String args[]) {
        int x=1,y=2;
        Class c=new Class();
        c.update();
        c.print("First");
        c.setX(10);
        c.update();
        c.print("Second");
    }
}
```

B) Convert the following switch statement into if-else statement. (2 marks)

```
int choice = input.nextInt();
switch (choice) {
    case 1:
        System.out.println("one");
    case 2:
        System.out.println("two");
        break;
    case 3:
        System.out.println("three");
    default:
        System.out.println("Invalid Entry");
        break;
}
```


Result

Question No.	Relevant Student Outcome	SO is Covered by %	Full Mark	Student Mark	Assessor's Feedback
1	a	60	6		
2	i	40	4		
Totals		100%	10		
I certify that the work contained within this assignment is all my own work and referenced where required.					Feedback Received:
Student Signature:		Date:			Student Signature: Date: