COMP 248 -Winter 2016

Tutorial 3

Question 1

Suppose the following definitions; What is the output of the following independent fragments?

```
final int MAXIMUM = 100, MINIMUM = 1, LIMIT = 100;

int num1 = 12, num2 = 25;
int num3 = 87;

String s1, s2, s3;
s1 = "Java_Homeworks_Are_Very_Hard ";
s2 = "Hard";
s3 = "";
```

a)

```
if(num1 < MAXIMUM) s2 = s1.toLowerCase();
else s2 = s1.toUpperCase();
System.out.println(s2);
```

b)

```
if (num2 <= MAXIMUM) s3 = s1 + " " + s2;
System.out.println(s3.replace('_', ' '));
```

c)

```
num2 = num2 + 500;
if (num1 < MAXIMUM)
if (LIMIT >= num2) System.out.println(s1.replace('_', ' '));
s3 = s1.replace(s2,"Easy");
System.out.println(s3);
```

Question 2

Predict the output of the following segment of code:

```
public class Q2 {

    public static void main(String [] args){

        int k = 5;
        System.out.println(k++);
        System.out.println(++k);
    }

}
```

Question 3

What is the value of the following variables?

1. `int x = (5+6)*2-1 ;` // Value of x?

2. `int i=5, j=3; j-=1;`
   `int k = ++i /j--;` // Value of k?

3. `int k =5;`
   `k =-k * --k;` // Value of k?

4. `boolean x =(10*3 < 300/10 ||13>12) ;` // Value of x?

5. `boolean y = (true || false && true);` // Value of y?

Question 4

Show the logical errors in the following fragments.

```
int i = 10;
if (i < 100 || i > 0 ) // check if 0<i<100
i ++;
System.out.printf(i);
```

Question 5

Assume the following declarations;

```
int x = 1;
boolean isFree = false;
char initial = 'L';
char code    = 'Y';
String english = "hi";
String italian = "ciao";
boolean q = (5 == 6);
```

For each of the following expressions, indicate if it creates a syntax error or not. If there is no error, indicate the value of the expression

a) (true && (5>6))

b) ((x!=0) || (x%2 == 1))

c) (isFree | (x<0))

d) initial == code

e) !!q

f) (0 <= x <= 10)

g) (english > italian)

h) (isFree) ? 4 : 10

i) "italian".equals(italian)

Question 6

Write a java program according to the following specification:

1. Display a message asking the user to enter a student id between 0 and 9999999.
2. Get the user input.
3. Verify the student id. If the user input is bigger than 9999999 or less than 0, then display an error message, and exit the program.
4. Display the user input.
5. Display a message asking the user to enter a password with the length between 6 and 20.
6. Get the user input.
7. Verify the password. If the password length is not between 6 and 20, exit the program.
8. Display the user input.
9. Display a message asking the user to enter a string.
10. Display the user input.
11. Change the string to upper case.
12. Display the new string.
13. Exit the program.