Course no : ESE2403	College of Engineering	Student No: _____
Course tile: Programming 1	**Final Exam**	Student Name:
Exam Time: 2 Hours	**1ⁿᵈ Semester 2013/2014**	**Date: 07.01.2014**
No of Questions:	**Total Grade: 100**	**Try to Answer All Questions**
Open Book: No	**Using Computer: No**	**Using Calculator: No**

First Question (30)

State whether each of the following is *true* or *false*.

1) All variables must be given a type when they are declared. (   )

2) Java considers the variables number and NuMbEr to be identical. (   )

3) The remainder operator (%) can be used only with integer operands. (   )

4) A selection statement specifies that an action is to be repeated while some condition
   remains true. (   )

5) A nested control statement appears in the body of another control statement. (   )

6) Java provides the arithmetic compound assignment operators +=, -=, *=, /= and %= for
   Abbreviating assignment expressions. (   )

7) The primitive types (boolean, char, byte, short, int, long, float and double) are portable
   across only Windows platforms. (   )

8) Specifying the order in which statements (actions) execute in a program is called program
   control. (   )

9) The unary cast operator (double) creates a temporary integer copy of its operand. (   )

10) Instance variables of type boolean are given the value true by default. (   )

11) Pseudocode helps a programmer think out a program before attempting to write it in a
   programming language. (   )

12) An array can store many different types of values. (   )

13) An array index should normally be of type float. (   )

14) An individual array element that is passed to a method and modified in that method
   will contain the modified value when the called method completes execution. (   )

15) Command-line arguments are separated by commas. (   )

16) The default case is required in the switch selection statement. (   )

17) The break statement is required in the last case of a switch selection statement. (   )

18) To test for a range of values in a switch statement, use a hyphen (−) between the start
   and end values of the range in a case label. (   )

19) Listing cases consecutively with no statements between them enables the cases to perform
   the same set of statements. (   )

20) An algorithm is a procedure for solving a problem in terms of the actions to execute and
   the order in which they execute. (   )

Second Question(20)

Find the error in each of the following code segments, and explain how to correct it:

1)
```
while ( c <= 5 )
   {
   product *= c;
++c;
```

....
....
....

2)   The following code should print the values 1 to 10:
```
n = 1;
 while ( n < 10 )
 System.out.println( n++ );
```

....
....
....

3)
```
if ( c => 7 )
 System.out.println( "c is equal to or greater than 7" );
```

....
....
....

4)   What is wrong with the following while statement?
```
while ( z >= 0 )
 sum += z;
```

....
....
....

5)
```
switch ( n )
   {
   case 1:
     System.out.println( "The number is 1" );
   case 2:
     System.out.println( "The number is 2" );
   break;
    default:
   System.out.println( "The number is not 1 or 2" );
    break;
   }
```

....
....
....

6)
```
int x = 1, total;
while ( x <= 10 )
{
total += x;
++x;
}
```

....
....
....

7)
```
final int ARRAY_SIZE = 5;
ARRAY_SIZE = 10;
```

....
....
....

8) **Assume**
```
int b[] = new int[ 10 ];
for ( int i = 0; i <= b.length; i++ )
b[ i ] = 1;
```

....
....
....

9) **Assume**
```
int a[][] = { { 1, 2 }, { 3, 4 } };
a[ 1, 1 ] = 5;
```

....
....
....

10)
```
if ( gender == 1 )
System.out.println( "Woman" );
else;
System.out.println( "Man" );
```

....
....
....

Third Question(15)

write a java method called "processString" that takes a string parameter and print:
- the length of string
- start charcter, end charcter of the string
- frequency of 'c' charater in the string

Forth Question(15)

write a java program that ask the user to enter grades as much as he need then calculate the grades
 average, min grade, max grade and median

Fifth Question(10)

a) Compare and contrast the *do while* and *while* for repetition statements.

b) Compare and contrast the break and continue statements.

Sixth Question(10)

What does the following program print?

```
import javax.swing.JOptionPane;
public class WeSWE {
    public static void main(String[] args) {
        double marks[] = new double[5];
        String names[] = new String[5];
        String n, m;
        for (int i = 0; i < 5; i++) {
            n = JOptionPane.showInputDialog(null, "Enter the Students name:",
                    "The student name", JOptionPane.INFORMATION_MESSAGE);
            m = JOptionPane.showInputDialog(null, "Enter the Students mark:",
                    "The student mark", JOptionPane.INFORMATION_MESSAGE);
            marks[i] = Double.parseDouble(m);
            names[i] = n;
        }
        String passed = "The following students are passed the exam:\n";
        String failed = "The following students are failed the exam:\n";
        for (int i = 0; i < 5; i++) {
            if (marks[i] >= 60) {
                passed = passed + names[i] + "    " + marks[i] + "\n";
            } else {
                failed = failed + names[i] + "    " + marks[i] + "\n";
            }
        }
        JOptionPane.showMessageDialog(null, passed, "The passed students",
                JOptionPane.INFORMATION_MESSAGE);
        JOptionPane.showMessageDialog(null, failed, "The failed students",
                JOptionPane.INFORMATION_MESSAGE);
        System.exit(0);
    }
}
```