

ICS3M Java

Written Exam

Date: June 2007

You will be allowed to bring in **1 page** of **handwritten** notes to assist you in the written test. Pay special attention to terminology in Java. To guide you in concepts learned this year, know the following:

1. Theory: source code, bytecode, compiling, naming conventions (when to use/not use capitalization), local/control identifiers (where declared, when used, life of identifier), primitive vs. Object identifiers, math and string functions, set brackets, round brackets, square brackets, semicolon, comma, difference between `c.readLine()`; & `c.readString()`; `c.print()`; and `c.println()`;
2. The two families of control structures (Selection & Repetition): if, else if, switch and for, do while loops
3. Methods: procedural methods, function methods, arguments, parameters, return values
4. Arrays: assigning values, Bubble sort, search algorithms
5. Output Demonstrations:

For example: assuming `int a=5`; `double b=2.64`; `char c = 'x'`; `String d= "5 items"`;

```
c.println(a); c.println(a,5);
```

```
c.println(b); c.println(b,5,3);
```

```
c.println(b,5,1); c.println( (int)b);
```

```
c.println( (double)a); c.println( c );
```

```
c.println( c,2); c.println((int) c);
```

```
c.println(d); c.println(d,10);
```

```
c.println(d,c); c.println("/t/td");
```

```
c.println(a+b); c.println(d+ " sold");
```

Here are some additional activities to help guide your review:

Please Note: You also need to review all the review questions from the previous test/quiz.

Mini-Activity #1 - Identifying Errors

Each of the following lines contains an error. Retype the line correctly.

```
static console c = new console (30,30,1 2);
```

```
public static void Main (string arg);
```

```
final GST = 0.07;
```

```
string first_name;
```

```
a = 35
```

```
name = "Peter Pan";
```

```
c.println(\t\t "hi");
```

```
c.clear( );
```

```
c.setTextColour(colour.blue);
```

```
c.println(wage,8:2);
```

Mini-Activity #2 - Show & Explain Output

For the following statements, assume the following:

```
int a=16 ; double b=12 .45; String name = new String ("Peter Pan");
```

What is the output for the following commands? Insure you indicate spaces with the symbol ^.

```
c.print (name);
```

```
c.println (b ,8,3 );
```

Output:

What does the 8 mean?

What does the 3 mean?

```
c.println ( Math.abs (b-a) );
```

Output:

Why do you need so many brackets?

```
c.println( name.toUpperCase() );
```

Output:

How could you use this in programming?

```
c.print ( a+a);
```

Output:

```
c.print ( "a+a" );
```

Output:

Explain the difference between the last two commands.

```
c.setCursor(1,5);
```

```
c.println ( name,15 );
```

Output:

```
c.println (name + name);
```

Output:

What is the function of the + ?

Mini-Activity #3 - Identifiers & Memory

What is the difference between initialization and declaration?

What is the special function of a 'final' identifier?

What is the difference between an integer and a double?

What is the difference between a String and a char?

What is the difference between a primitive identifier and an object identifier?

Why is memory important in larger programs?

Give the FULL command (with proper syntax) that will perform each of the following functions:

clear the screen of all existing output

change the colour of all following text

change the colour of all following graphics

display a title, centered on the screen

display HI and JO , with 10 spaces in between

generate a random number from 6 to 10

generate a random number from -3 to 5

ask the user to enter their name (show both question and prompt, displayed on same output line)

Give the output for each of the following casting & truncating commands:

Assuming: double d = 54.59; int c = 65;

// 65 is the ASCII code for 'A' & '%' means 'remainder of'

```
c.println( (char)c,3);
```

```
c.println( (double)c,5,2);
```

```
c.println( (int)(char)c );
```

```
c.println( (int)d );
```

```
c.println ( c/2 );
```

```
c.println ( c/2.0 );
```

```
c.println ( (double)c/2);
```

```
c.println ( (int) d / 2.0);
```

```
c.println ( (int)(d+0.5) );
```

```
c.println ( c%2);
```

For each of the following questions, write a FULL validation code and user input. Full validation code indicates that you are to control the user's entry to a limited set, and that reprompting includes both an error message and no scrolling.

```
c.println("What is your age: "); // integer entry
```

```
c.println("Enter an average: "); // double entry
```

```
c.println("Do you wish to play G-Gameboy or P-Playstation? "); // char entry
```

```
c.println("Enter your password: "); // string entry
c.println("What is the temperature in Brampton? "); // integer, both + and -ve
c.println("Please enter an even number: "); // any number divisible by 2, but NOT 0 (zero)
c.println("Please enter a letter from a-g: "); // remember, char 'a' is less than char 'b'!
c.println("Enter either JOHN or PETE: "); // use the String dot indicators
```