

# CSCI 1990 TEST 2 STUDY GUIDE SPRING 2009

## CHAPTER 3: USING CLASSES AND OBJECTS

1. What is output by the following?

```
public class StringMutation
{
    public static void main (String[] args)
    {
        String phrase = "Change is inevitable";
        String mutation1, mutation2, mutation3, mutation4;
        System.out.println ("Original string: \" + phrase + "\"");
        System.out.println ("Length of string: " + phrase.length());
        mutation1 = phrase.concat (" , except from vending machines.");
        mutation2 = mutation1.toUpperCase();
        mutation3 = mutation2.replace ('E', 'X');
        mutation4 = mutation3.substring (3, 30);
        System.out.println ("Mutation #1: " + mutation1);
        System.out.println ("Mutation #2: " + mutation2);
        System.out.println ("Mutation #3: " + mutation3);
        System.out.println ("Mutation #4: " + mutation4);
        System.out.println ("Mutated length: " + mutation4.length());
        System.out.println("Character at position 5 of phrase is: "+ phrase.charAt(5));
        System.out.println("Comparing mutation2 with mutation3: "
            +mutation2.compareTo(mutation3));
        System.out.println("Comparing equality of mutation2 with mutation3: "
            "+mutation2.equals(mutation3));
        System.out.println("Comparing equality (ignore case) of mutation1 with mutation2: "
            + mutation1.equalsIgnoreCase(mutation2));
    }
}
```

2. Given the following declaration:

```
Random r = new Random( );
```

What is output by the following?

a) `System.out.println(r.nextInt( ) );`

b) `System.out.println(r.nextInt(10) );`

3. Write a statement to simulate rolling a die.

4. Write a statement to raise x to the 100<sup>th</sup> power and assign its value to y.

## CHAPTER 5: CONDITIONALS AND LOOPS

1. Circle what is output below.

- a) `m = 5;`  
`if (m > 0)`  
`System.out.println( "greater than zero");`  
`System.out.println( "not greater than zero");`
- b) `m = 5;`  
`if (m > 0)`  
`System.out.println( "greater than zero");`  
`else`  
`System.out.println( "not greater than zero");`
- c) `grade=95;`  
`if (grade >= 60)`  
`System.out.println( "Passed.");`  
`else`  
`System.out.println( "Failed.");`  
`System.out.println( "You must take this course over again.");`
- d) `grade=95;`  
`if (grade >= 60)`  
`System.out.println( "Passed.");`  
`else`  
`{`  
`System.out.println( "Failed.");`  
`System.out.println( "You must take this course over again.");`  
`}`
- e) `average=80;`  
`if (average < 70)`  
`if (average < 60)`  
`System.out.println( "failing");`  
`else`  
`System.out.println("passing but marginal" );`  
`else`  
`System.out.println("C or better");`  
`System.out.println("end");`
- f) `average=80;`  
`if (average < 70)`  
`if (average < 60)`  
`System.out.println( "failing");`  
`else`  
`System.out.println("passing but marginal" );`  
`System.out.println("end");`
- g) `average=65;`  
`if (average < 70)`  
`if (average < 60)`  
`System.out.println( "failing" );`  
`else`  
`System.out.println("passing but marginal" );`  
`System.out.println("end");`

```

h) average=50;
   if (average < 70)
   if (average < 60)
   System.out.println( "failing" );
   else
   System.out.println("passing but marginal" );
   System.out.println("end");
i) average=80;
   if (average < 70)
   {if (average < 60)
   System.out.println( "failing" );
   }
   else
   System.out.println("passing but marginal" );
   System.out.println("end");
j) average=75;
   if (average>=80)
       if (average <90)
           System.out.println("B");
   else
       System.out.println("A");
   System.out.println("end");
k) average=75;
   if (average>=80) {
       if (average <90)
           System.out.println("B"); }
   else
       System.out.println("A");
   System.out.println("end");
l) score = 75;
   if (score >= 90)
       grade = "A";
   else if (score >= 80)
       grade = "B";
   else if (score >= 70)
       grade = "C";
   else if (score >= 60)
       grade = "D";
   else
       grade = "F";
   System.out.println("Grade is "+grade);

```

## CHAPTER 2: DATA AND EXPRESSIONS

1. Write a statement to draw a filled rectangle using a Graphics object g with upper-left-hand corner (20,50), height 40, and width 30.
2. Write a statement to set the background color to green.
3. Write a statement to set the drawing color to yellow.