CSE110 Review Questions (Solutions)

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1 Decision - Control Structures

Question 1 What is the output of the following code?

```
int depth = 8;
if (depth >= 8) {
        System.out.print("Danger: ");
        System.out.print("deep water. ");
}
System.out.println("No swimming allowed.");
```

Answer: Danger: deep water. No swimming allowed.

Question 2 What is the output of the following code?

```
int depth = 12;
int temp = 42;
System.out.print("The water is: ");
if (depth >= 8)
        System.out.print("deep ");
if (temp <= 50 && depth <= 12)
        System.out.print("cold ");
System.out.println(" wet.");
```

Answer: The water is deep cold wet.

Question 3 Consider the following code:

```
String str1 = "Java is fun";
String str2 = "Java is fun";
if ( /* */ )
        System.out.println("String1 and String2 are the same");
else
        System.out.println("String1 and String2 are different");
```

Fill in the missing condition to check if str1 and str2 are the same.
Answer: str1.equals(str2)

Question 4 If k holds a value of the type int, then the value of the expression:

```
k <= 10 || k > 10
```

a) must be true
b) must be false
c) could be either true or false
d) is a value of type int
Answer: A

Question 5 Write a program that asks for 3 integers and prints the median value of the three integers.
Answer:

```
import java.util.Scanner;
public class ThreeIntegers {
        public static void main(String[] args) {
                Scanner scan = new Scanner(System.in);
                int num1 = scan.nextInt();
                int num2 = scan.nextInt();
                int num3 = scan.nextInt();
                int result = 0;
                if (num1 > num2 && num1 < num3)
                        result = num1;
                else if (num1 < num2 && num1 > num3)
                        result = num1;
                else if (num2 > num1 && num2 < num3)
                        result = num2;
                else if (num2 < num1 && num2 > num3)
                        result = num2;
                else
                        result = num3;

                System.out.println("The median of " + num1 + ", " + num2 +
                    ", and " + num3 + " is " + result);
        }
}
```

Question 6 Evaluate the following expressions, assuming that x = -2 and y = 3.

```
a) x <= y
b) (x < 0) || (y < 0)
c) (x <= y) && (x < 0)
d) ((x + y) > 0) && !(y > 0)
```

Answers:
a) true
b) true
c) true
d) false

Question 7 Write the output of the following code:

```
int grade = 45;
if (grade >= 70)
        System.out.println("passing");
if (grade < 70)
        System.out.println("dubious");
if (grade < 60)
        System.out.println("failing");
```

Answer:
dubious
failing

Question 8 Write the output of the following code:

```
String option = "A";
if (option.equals("A"))
        System.out.println("addRecord");
if (option.compareTo("A") == 0)
        System.out.println("deleteRecord");
```

Answer:
addRecord
deleteRecord

Question 9 Write the output of the following code:

```
double x = -1.5;
if (x < -1.0)
        System.out.println("true");
else
        System.out.println("false");
        System.out.println("after if...else");
```

Answer:
true
after if...else

Question 10 Write the output of the following code:

```
int j = 8;
double x = -1.5;
if (x >= j)
        System.out.println("x is high");
else
        System.out.println("x is low");
```

Answer:
x is low

Question 11 Write the output of the following code:

```
double x = -1.5;
if (x <= 0.0) {
        if (x < 0.0)
                System.out.println("neg");
        else
                System.out.println("zero");
}
else
        System.out.println("pos");
```

Answer:
neg

Question 12 Write code that ensures that an int variable called number is an odd integer. Answer:

```
if ((number % 2) == 0)
        number++;
// number at this point will be guaranteed to be odd
```