

# CSE110 Review Questions (Solutions)

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## 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)  $x \leq y$
- b)  $(x < 0) \parallel (y < 0)$
- c)  $(x \leq y) \&\& (x < 0)$
- 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
```