

Name: \_\_\_\_\_

## Practice Test 2 (COP 2510)

- 1) Consider the following code that will assign a letter grade of 'A', 'B', 'C', 'D', or 'F' depending on a student's test score.

```
if (score >= 90) grade = 'A';  
if (score >= 80) grade = 'B';  
if (score >= 70) grade = 'C';  
if (score >= 60) grade = 'D';  
else grade = 'F';
```

- a) This code will work correctly in all cases
- b) This code will work correctly only if grade >= 60
- c) This code will work correctly only if grade < 60
- d) This code will work correctly only if grade < 70
- e) This code will not work correctly under any circumstances

Answer \_\_\_\_\_

- 2) What is the output of the following code:

```
int x = 9;  
int y = 8;  
int z = 7;  
  
if (x > 9)  
    if (y > 8)  
        System.out.println("x > 9 and y > 8");  
else if (z >= 7)  
    System.out.println("x <= 9 and z >= 7");  
else  
    System.out.println("x <= 9 and z < 7");
```

- a. x > 9 and y > 8;
- b. x <= 9 and z >= 7;
- c. x <= 9 and z < 7;
- d. None of the above.

Answer \_\_\_\_\_

- 3) Given the following code, where x = 0, what is the resulting value of x after the for-loop terminates?

```
for (int i=0;i<5;i++)  
    x += i;
```

- a) 0
- b) 4
- c) 5
- d) 10

Answer \_\_\_\_\_

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- 4) Which of the following will yield a pseudorandom integer number in the range from -5 to 5 given the following:

```
Random gen = new Random( );
```

- a. `gen.nextInt() * 10 - 5`
- b. `gen.nextInt(10) - 5`
- c. `gen.nextInt(11) - 5`
- d. `gen.nextInt(5) + 1`

Answer \_\_\_\_\_

- 5) In the following code, what values could be read into number to terminate the while loop?

```
Scanner scan = new Scanner(System.in);
System.out.print("Enter a number: ");
int number = scan.nextInt();
while (number < 100 || number > 500)
{
    System.out.print("Enter another number: ");
    number = scan.nextInt();
}
```

- a. Numbers less than 100
- b. Numbers greater than 500
- c. Numbers less than 100 or greater than 500
- d. Numbers greater than or equal to 99 and less than or equal to 499
- e. Numbers greater than or equal to 100 and less than or equal to 500

Answer \_\_\_\_\_

- 6) How many times will the following loop iterate?

```
int x = 10;
do {
    System.out.println(x);
    x--;
} while (x > 0);
```

- a) 0 times
- b) 1 time
- c) 9 times
- d) 10 times
- e) 11 times

Answer \_\_\_\_\_

- 7) What output would occur from the following code, including proper spacing.

```
for (j = 0; j < 4; j++)
{
    for (k = 0; k < 4; k++)
        if (j!=k) System.out.print(' ');
        else System.out.print('*');
    System.out.println( );
}
```

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- a) \*  
\*  
\*  
\*
- b) \*  
\*\*  
\*\*\*  
\*\*\*\*
- c) \*  
\*  
\*  
\*
- d) \*\*\*\*  
\*\*\*  
\*\*  
\*

Answer \_\_\_\_\_

- 8) The following nested loop structure will execute the inner most statement (x++) how many times?

```
for (int j = 0; j < 3; j++)  
  for (int k = 3; k > j; k--)  
    x++;
```

- a) 2  
b) 3  
c) 4  
d) 6  
e) 9

Answer \_\_\_\_\_

- 9) Given the following switch statement where x is an int,

```
switch (x)  
{  
  case 3 :  
    x += 2;  
    break;  
  case 4 :  
  case 5 :  
    x += 3;  
    break;  
  case 6 :  
  case 7 :  
    x += 1;  
    break;  
}
```

If x is currently equal to 4, what will the value of x be after the switch statement executes?

- a) 5  
b) 6  
c) 7  
d) 8  
e) 10

Answer: \_\_\_\_\_

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10) Analyze the following two code fragments.

(i)  
int x = 5;  
if (x > 0) && (x < 100)  
System.out.println("x is between 1 and 100");

(ii)  
int x = 5;  
if (x > 0 && x < 100)  
System.out.println("x is between 1 and 100");

- a. The first fragment has a syntax error.
- b. The second fragment has a syntax error.
- c. Both fragments produce the same output.
- d. Both fragments compile, but produce different result.
- e. None of the above.

Answer: \_\_\_\_\_

11) What is wrong, logically, with the following code?

```
if (x > 10) System.out.println("Large");  
else if (x > 6 && x <= 10) System.out.println("Medium");  
else if (x > 3 && x <= 6) System.out.println("Small");  
else System.out.println("Very small");
```

- a) There is no logical error, but there is no need to have (x <= 10) in the second conditional or (x <= 6) in the third conditional
- b) There is no logical error, but there is no need to have (x > 6) in the second conditional or (x > 3) in the third conditional
- c) The logical error is that no matter what value x is, "Very small" is always printed out
- d) The logical error is that no matter what value x is, "Large" is always printed out
- e) There is nothing wrong with the logic at all

Answer: \_\_\_\_\_

12) Assume that x and y are int variables with x = 5, y = 3, and a and d are char variables with a = 'a' and d = 'A', and examine the following conditions:

Condition 1: (x < y && x > 0)  
Condition 2: (a != d || x != 5)  
Condition 3: !(true && false)  
Condition 4: (x > y || a == 'A' || d != 'A')

- a) All 4 Conditions are true
- b) Only Condition 2 is true
- c) Condition 2 and Condition 4 are true only
- d) Conditions 2, 3 and 4 are all true, Condition 1 is not
- e) All 4 Conditions are false

Answer: \_\_\_\_\_

13) The statement if (x < 0) y = x; else y = 0; can be rewritten using a conditional operator as

- a) y = (x < 0) ? x : 0;
- b) x = (x < 0) ? y : 0;
- c) (x < 0) ? y = x : y = 0;
- d) y = (x < 0);
- e) y = if (x < 0) x : 0;

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Answer \_\_\_\_\_

14) What is balance after the following code is executed?

```
int balance = 10;

while (balance > 0) {
    if (balance < 9)
        balance = balance - 8;
    else balance = balance - 1;
}
```

- a. -8
- b. -1
- c. 0
- d. 1
- e. 2
- f. The loop does not end

Answer \_\_\_\_\_

15) Given that s is a String, what does the following loop do?

```
for (int j = s.length(); j > 0; j--)
    System.out.print(s.charAt(j-1));
```

- a) it prints s out backwards
- b) it prints s out forwards
- c) it prints s out backwards after skipping the last character
- d) it prints s out backwards but does not print the 0<sup>th</sup> character
- e) it yields a run-time error because there is no character at s.charAt(j-1) for j = 0

Answer \_\_\_\_\_

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## Free Form Questions

- 16) Complete the following program to compute the average of a set of values entered by the user, which is the sum divided by the total number of values entered. The loop should continue to process input until the user enters zero. This assumes that zero is not one of the valid numbers that should contribute to the average.

```
import java.util.Scanner;

public class Average
{
    //-----
    // Computes the average of a set of values entered by the user.
    //-----
    public static void main (String[] args)
    {
        int sum = 0, value, count = 0;
        double average;
        Scanner scan = new Scanner (System.in);

        System.out.print ("Enter a positive integer (0 to quit): ");
        value = scan.nextInt();

        //fill in code here to get the values from the user and compute the average

    }
}
```

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17) Write a switch statement that tests the value of the char variable *response* and performs the following actions:

- if *response* is *y*, the message Your request is being processed is printed
- if *response* is *n*, the message Thank you anyway for your consideration is printed
- if *response* is *h*, the message Sorry, no help is currently available is printed
- for any other value of *response*, the message Invalid entry; please try again is printed

18) Complete the following program that adds the square of integers from *lo* up through *hi* (inclusive), and stores the result in *result*. Your program should compute  $lo^2 + (lo+1)^2 + (lo+2)^2 + \dots + hi^2$ .

```
import java.util.Scanner;
public class Sum{
    public static void main(String[] args)
    {
        int lo, hi, result;
        Scanner scan = new Scanner(System.in);
        System.out.println("Please enter the value for lo");
        lo = scan.nextInt();
        System.out.println("Please enter the value for hi");
        hi = scan.nextInt();

        //fill in code here
    }
}
```

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```
// display result
```

```
    }  
}
```

19) Complete the following program that reads a word and prints the number of lower case letters in the word.

```
import java.util.Scanner;
```

```
public class CountLowerCase{
```

```
    public static void main(String[] args)  
    {
```

```
        String phrase;  
        Scanner scan = new Scanner(System.in);  
        System.out.println("Please enter a sentence:");  
        phrase = scan.nextLine();  
        char ch;  
        int count = 0;
```

```
        //fill in code here
```

```
        System.out.println("There are " + count + " lower case letters.");  
    }  
}
```