

**1.- Which of the following Java operators can be used with boolean variables? (Choose all that apply.)**

Opciones: 1. ==

2. +

3. -

4. !

5. %

6. <=

7. Cast with (boolean)

**2.- What data type (or types) will allow the following code snippet to compile? (Choose all that apply.)**

```
byte apples = 5;  
short oranges = 10;  
_____ bananas = apples + oranges;
```

Opciones: 1. int

2. long

3. boolean

4. double

5. short

6. Byte.

**3.- What change, when applied independently, would allow the following code snippet to compile? (Choose all that apply.)**

```
long ear = 10;  
int hearing = 2 * ear;
```

Opciones: 1. No change; it compiles as is.

2. Cast ear on line 4 to int.

3. Change the data type of ear on line 3 to short.

4. Cast 2 \* ear on line 4 to int.

5. Change the data type of hearing on line 4 to short.

6. Change the data type of hearing on line 4 to long.

**4.- What is the output of the following program?**

```
1: public class CandyCounter {  
2:     static long addCandy(double fruit, float vegetables) {  
3:         return (int)fruit+vegetables;  
4:     }  
5:  
6: public static void main(String[] args) {  
7:     System.out.print(addCandy(1.4, 2.4f) + "- ");  
8:     System.out.print(addCandy(1.9, (float)4) + "-");  
9:     System.out.print(addCandy((long)(int) (short)2, (float)4)); } }
```

Opciones:

1. 4-6-6.0

2. 3-5-6

3. 3-6-6

4. 4-5-6

5. The code does not compile because of line 9.

6. None of the above

**5. What are the unique outputs of the following code snippet? (Choose all that apply.)**

```
int a = 2, b = 4, c = 2;  
System.out.println(a > 2 ? --c : b++);  
System.out.println(b = (a!=c ? a : b++));  
System.out.println(a > b ? b < c ? b : 2 : 1);
```

Options: 1. ☒ 1

2. ☐ 2

3. ☐ 3

☒ 4. 4

☒ 5. 5

6. ☐ 6

7. ☐ The code does not compile

**6. Given the following code snippet, what is the value of the variables after it is executed? (Choose all that apply.)**

```
int ticketsTaken = 1;
int ticketsSold = 3;
ticketsSold += 1 + ticketsTaken++;    = 3 + 1 + 1
ticketsTaken *= 2;    = 2 * 2
ticketsSold += (long)1;    = 5 + 1
```

- Opciones:
- 1. ticketsSold is 8
  - 2. ticketsTaken is 2
  - ☒ 3. ticketsSold is 6
  - 4. ticketsTaken is 6
  - 5. ticketsSold is 7
  - ☒ 6. ticketsTaken is 4
  - 7. The code does not compile.

**7. What is the output of the following code snippet? (Choose all that apply.)**

```
3: int temperature = 4;
4: long humidity = -temperature + temperature * 3;    = -4 + 4 * 3
5: if (temperature >= 4)    4 >= 4
6:     if (humidity < 6) System.out.println("Too Low");    8 < 6
7:     else System.out.println("Just Right");
8: else System.out.println("Too High");
```

- Opciones:
- 1. Too Low
  - ☒ 2. Just Right
  - 3. Too High

4. A NullPointerException is thrown at runtime.
5. The code will not compile because of line 7.
6. The code will not compile because of line 8.

**8. Which statements, when inserted independently into the following blank, will cause the code to print 2 at runtime? (Choose all that apply.)**

```
int count = 0;
BUNNY: for(int row = 1; row <=3; row++)
    RABBIT: for(int col = 0; col <3 ; col++) {
        if((col + row) % 2 == 0)
            _____;
        count++;
    }
System.out.println(count);
```

```
col row
1- 0 + 1;
print
2- 1 +1 2%2 = 0
continue bunny
3- 0 + 2; 2%2 = 0
continue bunny
4- 0 3
print
5 1 3 4%2 = 0
continue bunny
```

- Opciones:
1. break BUNNY
  2. break RABBIT
  3. continue BUNNY
  4. continue RABBIT
  5. break
  6. continue
  7. None of the above, as the code contains a compiler error

**9. What is the output of the following code snippet?**

```
2: boolean keepGoing = true;
3: int result = 15, meters = 10;
4: do {
5:     meters--;
6:     if(meters==8) keepGoing = false;
7:     result -= 2;
8: } while keepGoing;
9: System.out.println(result);
```

Opciones: 1. 7

2. 9

3. 10

4. 11

5. 15

6. The code will not compile because of line 6.

7. The code does not compile for a different reason.

**10. What is the output of the following code snippet? (Choose all that apply.)**

```
9: int w = 0, r = 1;
10: String name = "";
11: while(w < 2) { 0<2 = true
12:     name += "A"; A
13:     do {
14:         name += "B"; AB
```

```
15:         if(name.length()>0) name += "C"; ABC
16:         else break;
17:     } while (r <=1); 1<=1 true
18:     r++; w++; }
19:     System.out.println(name);
```

Opciones: 1. ABC

2. ABCABC

3. ABCABCABC

4. Line 15 contains a compilation error.

5. Line 18 contains a compilation error.

6. The code compiles but never terminates at runtime.

7. The code compiles but throws a NullPointerException at runtime.

### 11. What is output by the following code? (Choose all that apply.)

```
1: public class Fish {
2:     public static void main(String[] args) {
3:         int numFish = 4;
4:         String fishType = "tuna";
5:         String anotherFish = numFish + 1;
6:         System.out.println(anotherFish + " " + fishType);
7:         System.out.println(numFish + " " + 1);
8:     }}
```

Opciones: 1. 4 1

2. 5

3. 5 tuna

4. 5tuna

5. 51tuna

6. The code does not compile.

## 12. What is the result of the following code?

```
7: StringBuilder sb = new StringBuilder();  
8: sb.append("aaa").insert(1, "bb").insert(4, "ccc");  
9: System.out.println(sb);
```

Opciones: 1. abbaaccc

2. abbaccca

3. bbaaaccc

4. bbaaccca

5. An empty line

6. The code does not compile.

## 13. What is the result of the following code?

```
12: int count = 0;  
13: String s1 = "java";  
14: String s2 = "java";  
15: StringBuilder s3 = new StringBuilder("java");  
16: if (s1 == s2) count++;  
17: if (s1.equals(s2)) count++;  
18: if (s1 == s3) count++;  
19: if (s1.equals(s3)) count++;  
20: System.out.println(count);
```



Opciones: 1. 0

2. 1

3. 2

4. 3

5. 4

6. An exception is thrown.

7. The code does not compile.

#### 14. What is the result of the following code?

```
public class Lion {  
    public void roar(String roar1, StringBuilder roar2) {  
        roar1.concat("!!!");  
        roar2.append("!!!");  
    }  
    public static void main(String[] args) {  
        String roar1 = "roar";  
        StringBuilder roar2 = new StringBuilder("roar");  
        new Lion().roar(roar1, roar2);  
        System.out.println(roar1 + " " + roar2);  
    }  
}
```

Opciones: 1. roar roar

2. roar roar!!!

3. roar!!! roar

4. roar!!! roar!!!

5. An exception is thrown.

6. The code does not compile.

**15. Which of the following can replace line 4 to print "avaJ"? (Choose all that apply.)**

```
3: var puzzle = new StringBuilder("Java");
```

```
4: // INSERT CODE HERE
```

```
5: System.out.println(puzzle);
```

Opciones: 1 `puzzle.reverse();`

2. `puzzle.append("vaJ$").substring(0, 4);`

3. `puzzle.append("vaJ$").delete(0, 3).deleteCharAt(puzzle.length() - 1);`

4. `puzzle.append("vaJ$").delete(0, 3).deleteCharAt(puzzle.length());`

5. None of the above