

## Examen 1

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Note: It can see that the correct answers are marked whit blue color.

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

1. **==**

2. +

3. --

4. **!**

5. %

6. **<=**

7. Cast with (boolean)

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

```
1. byte apples = 5;  
2. short oranges = 10;  
3. _____ bananas = apples + oranges;
```

1. **int**

2. **long**

3. boolean

4. **double**

5. short

6. byte

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

```
3: long ear = 10;  
4: int hearing = 2 * ear;
```

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*.

**Question 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));}}
```

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

**Question 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);
```

1. 1

2. 2

3. 3

4. 4

5. 5

6. 6

7. The code does not compile.

**Question 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++;  
ticketsTaken *= 2;  
ticketsSold += (long)1;
```

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.

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

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

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.

**Question 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);
```

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

**Question 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);
```

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.

**Question 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) {
12:     name += "A";
13:     do {
14:         name += "B";
15:         if(name.length() > 0) name += "C";
16:         else break;
17:     } while (r <= 1);
18:     r++; w++; }
19: System.out.println(name);
```

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.

**Question 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: } }
```

1. 4 1
2. 5
3. 5 tuna
4. 5tuna
5. 51tuna

6. The code does not compile.

**Question 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);
```

1. abbaaccc
2. abbaccca
3. bbaaaccc
4. bbaaccca
5. An empty line
6. The code does not compile.

**Question 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);
```

- 1. 0
- 2. 1
- 3. 2
- 4. 3
- 5. 4
- 6. An exception is thrown.
- 7. The code does not compile.

**Question 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);  
    }  
}
```

- 1. roar roar
- 2. roar roar!!!
- 3. roar!!! roar
- 4. roar!!! roar!!!
- 5. An exception is thrown.
- 6. The code does not compile.



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

```
3: StringBuilder puzzle = new StringBuilder("Java");  
4: // INSERT CODE HERE  
5: System.out.println(puzzle);
```

- 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