Java Academy 2022 by Accenture and Xideral

Exam – Week 1

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Chapter 3

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*)

The == is an equality operator and we can use it with booleans, primitives and objects. The ! is a logic operator and is only used with boolean values.

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

Directly, it is int, long and double, but it would still work with byte and short if the operation is cast.

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.

The options 2,3 and 4 reduce the value to int, and option 6 increases the value to long

Question 6

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.

The answer is option 6, It doesn't compile, because addCandy is a method that returns a value of type long, but it returns a float type and because of its size in bytes it doesn't fit, this is because it casts int only to fruit and not to all the operation

Question 9

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 17

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

Chapter 4

Question 2

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("Too
Low");
  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 6

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.

It does not compile the code because in the while loop there is no correct comparison

Question 20

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.

The code compiles but never terminates at runtime because r never changes its value

Chapter 5

Question 1

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.

The code does not compile because you want to assign to a String a result of type int that is numFish + 1

Question 4

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 5

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.

The code does not compile because it compares a String object (s1) with a StringBuilder object (s3)

Question 6

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 13

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);
```

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

The first reverses the letters.

Option 3, adds vaJ$ and is JAvavaJ$, then removes the first 3 letters, and at the end removes the final character which is $