

Note: Correct responses are based on Java, **J2sdk v 1.7.25**, from Sun Microsystems, Inc. All provided code segments are intended to be syntactically correct, unless otherwise stated (i. e. `error` is an answer choice) and any necessary Java 2 Standard Packages have been imported. Ignore any typographical errors and assume any undefined variables are defined as used. **For all output statements, assume that the `System` class has been statically imported...** *`import static java.lang.System.*;`*

QUESTION 1	
What is $10010_2 + 63_7$?	
A. 110111_2	B. 334_4 C. $3E_{16}$ D. 223_5 E. 146_6
QUESTION 2	
What is output by the code to the right?	<pre>int x = 3; double y = 4.0; out.println(x * y);</pre>
A. 1.333 B. 12.0 C. 0.75 D. 12 E. 34	
QUESTION 3	
What is output by the code to the right?	<pre>int x = 3; x += 3 + 4; out.println(x);</pre>
A. 13 B. 7 C. 14 D. 10 E. 0	
QUESTION 4	
What is output by the code to the right?	<pre>int y = 0; for (int i=0; i<10; i+=2) { y += 4; } out.println(y);</pre>
A. 24 B. 20 C. 40 D. 4 E. 16	
QUESTION 5	
What is output by the code to the right?	<pre>String s1 = "ABCDE"; String s2 = "edcba"; String x = s1.substring(1,2); out.println(s2.indexOf(x));</pre>
A. 3 B. 2 C. 1 D. -1 E. 0	
QUESTION 6	
What is output by the code to the right?	<pre>int[] ray = {0,0,0,0}; for (int i=0; i<ray.length; i++) { ray[i] = i * i; } out.println(Arrays.toString(ray));</pre>
A. [0,0,0,0] B. [0,1,2,3] C. [0,1,4,9] D. [i,i,i,i] E. [1,4,9,16]	
QUESTION 7	
What is output by the code to the right?	<pre>int x = 27; out.println(x != 12 x >= 12);</pre>
A. true B. 27 C. 12 D. false E. 0	
QUESTION 8	
What is output by the code to the right?	<pre>int x = 19; if (x > 5) out.print("Hi"); else if (x < 20) out.print("Bye"); if (x == 19) out.print("No"); else out.print("Yes");</pre>
A. HiYes B. Hi C. HiByeNo D. HiNoYes E. HiNo	
QUESTION 9	
What is output by the code to the right?	<pre>out.println(3 + 2 * 3);</pre>
A. 15 B. 323 C. 18 D. 9 E. 10	

QUESTION 10 Which of the following could replace <***1**> in the client code ? A. public static B. public C. private D. public final E. private static	<pre>class Chicken { <***1**> void cluck() {} } //////////////////////////////////// // Client code Chicken.cluck();</pre>
QUESTION 11 What is output by the code to the right ? A. 360.0 B. 270.0 C. 90.0 D. 1.57 E. 180.0	<pre>double x = Math.PI / 2; double q = Math.toDegrees(x); out.printf("%.1f",q);</pre>
QUESTION 12 Which of the following could replace <***1**> ? I. Bird b = new Bird(); II. Bird b = new Bird("Bob"); III. Bird b = new Falcon("Bob"); IV. Falcon b = new Falcon(); V. Falcon b = new Bird(); A. I only B. II only C. I & IV only D. I, III, V only E. I, II, IV only	<pre>class Bird { public Bird() { /* code */ } public Bird(int size) { /* */ } public bird(int size, String name) {} protected void makeNoise() { /**/ } } class Falcon extends Bird { <***2**> void makeNoise() { /* */ } } //////////////////////////////////// // Client code <***1**> out.print(b);</pre>
QUESTION 13 Which of the following could replace <***2**> ? I. protected II. private III. public IV. static V. final A. I only B. I and II only C. III only D. I and III only E. I, II, IV only	<pre>class Falcon extends Bird { <***2**> void makeNoise() { /* */ } } //////////////////////////////////// // Client code <***1**> out.print(b);</pre>
QUESTION 14 Which of the following is NOT possible output from the code to the right? A. 6.00 B. 2.07 C. 6.94 D. 1.75 E. 2.48	<pre>out.printf("%.2f", Math.random() * 5 + 2);</pre>
QUESTION 15 How many lines would the code to the right print? A. 2 B. 3 C. 1 D. 4 E. 5	<pre>String s = "n\n\\n\r\n\\n"; out.print(s);</pre>
QUESTION 16 How many times would the loop at the right iterate? A. 17 B. 8 C. 23 D. 10 E. 16	<pre>for (int i=5; i<=50; i+=5) { i -= 3; ++i; }</pre>

QUESTION 17

What is output by the code to the right?

- A. 5
 B. 5.667
 C. 9
 D. 51
 E. 54

```
int[][] mat = {{1,2,3},
               {4,5,6},
               {9,10,11}};
int x = 0;
int cnt = 0;
for (int r=0; r<mat.length; ++r)
{
    for (int c=0; c<mat[r].length; ++c)
    {
        x += mat[r][c];
        cnt++;
    }
}
out.println(x / cnt);
```

QUESTION 18

What is output by the code to the right?

- A. -1 B. 10 C. 3 D. 2
 E. No output due to runtime error

```
String s = "I am the Walrus";
out.println(s.indexOf("a", 4));
```

QUESTION 19

What is output by the code to the right?

- A. true B. false C. b D. b2 E. 0

```
boolean b1 = true;
boolean b2 = true;
boolean b3 = false;
out.println(!b1 || (!b2 || !b3));
```

QUESTION 20

What is output by the code to the right?

- A. 1 B. 0 C. 7 D. 13 E. 2

```
out.println(100 % 7 % 2);
```

QUESTION 21

Which of the following numbers is the largest?

- A. 77_{16} B. 175_8 C. 124_{10} D. 1110111_2 E. 147_9

QUESTION 22

What is output by the code to the right?

- A. [0,3,2,3,4] B. [0,3,2,3,12]
 C. [12,3,2,3,4] D. [0,1,2,3,4]
 E. [12,3,2,3,12]

```
int[] a = {0,1,2,3,4};
int[] b = a;

a[0] = 12;
b[1] = a[3];
a[4] = b[0];
a[3] = b[1];

out.println(Arrays.toString(b));
```

QUESTION 23

What is output by the code to the right?

- A. [Eagle, Falcon, Dodo]
 B. [Eagle, Chicken, Falcon, Chicken, Dodo]
 C. [Eagle, Chicken, Flacon, Dodo]
 D. [Eagle, Falcon, Chicken, Dodo]
 E. No output due to Runtime Exception

```
ArrayList<String> lst;
lst = new ArrayList<>();
lst.add("Eagle");
lst.add("Chicken");
lst.add("Falcon");
lst.add("Chicken");
lst.add("Dodo");
lst.remove("Chicken");
out.println(lst);
```

<p>QUESTION 24</p> <p>What is output by the code to the right?</p> <p>A. Ciknak B. kankiC C. ChickenHawk D. kwaHnekcihC E. No output due to Runtime Exception</p>	<pre>String s = ""; char[] chars = "ChickenHawk".toCharArray(); for (int i=0; i<chars.length; i++) { if (i % 2 == 0) s = chars[i] + s; } out.println(s);</pre>
<p>QUESTION 25</p> <p>What is output by the code to the right?</p> <p>A. 40 B. 45 C. 47 D. 15 E. 135</p>	<pre>int i = 45; i = i >> 3; i = i << 3; out.println(i);</pre>
<p>QUESTION 26</p> <p>What is output by the code to the right?</p> <p>A. 2 B. 3 C. 4 D. 5 E. 6</p>	<pre>int x = 2; do { x += 1; } while(x%4==0 x%3==0); out.println(x);</pre>
<p>QUESTION 27</p> <p>What is output by the code to the right?</p> <p>A. 19 B. 26 C. 25 D. 27 E. 24</p>	<pre>public static int up(int i) { return down(++i); } public static int down(int i) { if (i > 25) { return --i; } return up(i++); } //////////////////////////////////// //Client code out.println(up(1));</pre>
<p>QUESTION 28</p> <p>What it output by the code to the right?</p> <p>A. Hello B. HelloThere C. ThereChicken D. Cheese E. No output due to a syntax error.</p>	<pre>public static void blah(int i) { if (i > 5) if (i > 6) out.print("Hello"); out.print("There"); if (i > 7) out.print("Chicken"); out.print("Falcon"); else out.print("Cheese"); } //////////////////////////////////// //Client code blah(7);</pre>

QUESTION 29

What code could replace `<***1***>` for the method to the right to correctly return the sum of all numbers in `nums` that are at least 10?

- I. `i > 10`
- II. `i >= 10`
- III. `nums[i] >= 10`
- IV. `i > 9`
- V. `i <= 10`

- A. I only
- B. II only
- C. III only
- D. II & IV
- E. II, IV, & V

```
public int sumLarge(int nums[]) {
    int sum = 0;
    for (int i: nums) {
        if (<***1***>)
            sum += i;
    }
    return sum
}
```

QUESTION 30

What is returned by the call `something(8)`?

- A. 16
- B. 24
- C. 52
- D. 12
- E. 20

```
public int something(double x)
{
    if (Math.abs(x * -1.05) < 30)
    {
        return something(x * 1.5);
    }
    return (int)(x + 12);
}
```

QUESTION 31

What is output by the code to the right?

- A. [0,0,0,0,0,0]
- B. [80,68,56,12,16,20]
- C. [0,4,8,12,16,20]
- D. [0,4,8,44,32,20]
- E. No output due to an index out of bounds exception

```
int[] r = new int[6];
for (int i=r.length-1; i>=0; --i)
{
    r[i] = (r[r.length-1-i]+i) * 4;
}
out.println(Arrays.toString(r));
```

QUESTION 32

What is output by the code to the right?

- A. [2,2,2,2,2,2]
- B. [2,4,6,8,10,12]
- C. [0,0,0,0,0,0]
- D. [0,2,4,6,8,10]
- E. [0,1,2,3,4,5]

```
int[] ray = new int[6];
Arrays.fill(ray, 2);
for (int i=0; i<ray.length; ++i)
{
    ray[i] *= i;
}
out.println(Arrays.toString(ray));
```

QUESTION 33

What is output by the code to the right?

- A. 2
- B. 3
- C. 4
- D. 1
- E. No output due to a syntax error.

```
Map<String, Integer> mp;
mp = new Map<>();
mp.put("Hi", 0);
mp.put("PoohBear", 2);
mp.put("Falcon", 7);
mp.remove("Pooh Bear");
out.println(mp.size());
```

QUESTION 34

What is output by the code to the right?

- A. 10001
- B. 1101
- C. 10101
- D. 11001
- E. 10011

```
int x = 1101 >> 6;
out.print(Integer.toBinaryString(x));
```

QUESTION 35

What is output by the code to the right?

- A. 28
- B. false
- C. apple
- D. pie
- E. No output due to Runtime Exception

```
String q = 28/3==9 ? "apple" : "pie";
out.println(q);
```

<p>QUESTION 36</p> <p>What is output by the code to the right?</p> <p>A. [1, 3, 1] B. [7, 3, 1] C. [7, 1, 3, 1] D. [7, 1, 3] E. [1, 3, 1, 7]</p>	<pre>LinkedList ls; ls = new LinkedList(); ls.add(0, 1); ls.add(1, 3); ls.add(1); ls.getFirst(); ls.offerFirst(7); out.println(ls);</pre>
<p>QUESTION 37</p> <p>What is output by the code to the right?</p> <p>A. 9 B. 17 C. 12 D. 15 E. No output due to Runtime Exception</p>	<pre>int cnt = 0; for (int i=100000; i>0; i=i>>1) cnt += 1; out.println(cnt);</pre>
<p>QUESTION 38</p> <p>Which of the following could replace <***1**> so that the code to the right outputs TrueFalse ?</p> <p>I. \\d{32} II. [A-F0-9]{32} III. ^[a-f0-9]{32}\$ IV. \\A[0-9a-f]{32}\\Z V. \\A[a-f0-9]{32}\$</p> <p>A. III only B. II & III C. III, IV, & V D. III & IV E. All would work</p>	<pre>String s = "8b1a9953c4611296a827abf8c47804d7"; String s2 = "Hi " + s + " Bye"; out.print(s.matches("<***1**>")); out.print(s2.matches("<***1**>"));</pre>
<p>QUESTION 39</p> <p>What is output by the code to the right?</p> <p>A. 4 B. 5 C. 6 D. 7 E. 8</p>	<pre>int x = 5; switch (x) { case 5: ++x; case 6: x++; } out.println(x);</pre>
<p>QUESTION 40</p> <p>What is output by the code to the right?</p> <p>A. 110100 B. 104 C. 27 D. 65317 E. 65396</p>	<pre>int i = 27; i += 0xff25; i += 0b110100; out.println(i);</pre>