

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 $235_7 + 132_5$?

- A. 367_{10} B. 2212_4 C. 1132_5 D. 20010_3 E. 324_7

QUESTION 2

What is output by the code to the right?

- A. 17 B. 18 C. 12 D. 19 E. 13

```
int x = 7;
x += 4 + ++x;
out.print(x);
```

QUESTION 3

What is output by the code to the right?

- A. 0 B. 2520 C. 17640 D. 147
E. No output due to runtime exception

```
int x=3,y=7;
for (;x<7;x+=1)
    y *= x;
out.print(y);
```

QUESTION 4

What is output by the code to the right?

- A. 21 B. 25 C. 19 D. 10 E. 15

```
int x=0;
for(int i=0; i<5; ++i) {
    while (i<5)
        x += i++;
}
out.println(x);
```

QUESTION 5

What is output by the code to the right?

- A. ChhiChichickChickenhicken
B. CChiChickChicken
C. ChhiChichickChicke
D. hihickhicken
E. No output due to runtime error

```
String s = "Chicken";
String st = "";
for (int i=0; i<s.length(); i++)
    st += s.substring(i%2, i);
out.print(st);
```

QUESTION 6

What is output by the code to the right?

- A. er B. ere C. Hi D. i
E. No output due to runtime error

```
String[] ray =
    {"Hi", "there", "Bob"};
out.println(ray[1].substring(2, 4));
```

QUESTION 7

What is output by the code to the right?

- A. true
B. truefalse
C. falsetrue
D. false
E. No output due to runtime error

```
boolean a = true;
boolean b = false;
boolean c = !a;

out.print(!a && !b && !c);
```

QUESTION 8

What is output by the code to the right?

- A. 3
- B. 4
- C. 5
- D. 6
- E. 3456

```
int i=3;
int y = 0;
switch (i)
{
    case 2:
        y = 3;
    case 3:
        y = 4;
    case 4:
        y = 5;
    default:
        y = 6;
}
out.print(y);
```

QUESTION 9

What is output by the code to the right?

- A. 1.0 B. 7.0 C. 9.5 D. 7 E. 1

```
out.println(3 * 2.0 + 7 % 2);
```

QUESTION 10

Which of the following is possible output from the code to the right?

- A. Molly B. Molly@5a30cefd
- C. name D. Schnauzer@5a30cefd
- E. No output due to runtime exception

```
class Schnauzer {
    private String name="Molly";
    public String toString() {
        return name;
    }
}

////////////////////////////////////
// client code
Schnauzer s = new Schnauzer();
out.println(s);
```

QUESTION 11

What is output by the code to the right?

- A. 3 B. 9.0 C. 19683 D. 81 E. 3.0

```
int x = 27;
out.print(Math.cbrt(x));
```

QUESTION 12

What is output by the code to the right?

- A. +54.364 B. %+1.3f
- C. 4.634 D. 54.634
- E. 5.634

```
double num = 54.364334;
String fmt = "%+1.3f";
out.printf(fmt, num);
```

QUESTION 13

What is output by the code to the right?

- A. ""\
- B. ""b\
- C. ""\b\
- D. "\
- E. "\"\"b\\

```
out.println("\"\"\"b\\");
```

<p>QUESTION 14</p> <p>What is output by the code to the right?</p> <p>A. 0 B. 3 C. 2 D. 4</p> <p>E. No output due to an ArrayOutOfBounds Exception</p>	<pre>int[][] mat = new int[3][4]; mat[2] = new int[1]; for (int r=0; r<mat.length; r++) { for (int c=0; c<mat[r].length; c++) mat[r][c] = r * c; } out.println(mat[1][3]);</pre>
<p>QUESTION 15</p> <p>What is output by the code to the right?</p> <p>A. 01234 B. 123456 C. 2345 D. 12345</p> <p>E. No output due to runtime exception</p>	<pre>int x = 0; for (;x<5;) { out.print(++x); }</pre>
<p>QUESTION 16</p> <p>What is output by the code to the right?</p> <p>A. WWaWal B. WWaWalWald</p> <p>C. WWa D. WWaWalWaldo</p> <p>E. W</p>	<pre>String s = "Waldo"; String st = ""; while (s.length() >0) { st = s.substring(0, s.length() - 1) + st; s = s.substring(0, s.length() - 1); } out.print(st);</pre>
<p>QUESTION 17</p> <p>What is output by the code to the right?</p> <p>A. 8 B. 17 C. 11 D. 0 E. 544</p>	<pre>out.print(17 << 2 >> 3);</pre>
<p>QUESTION 18</p> <p>What is output by the code to the right?</p> <p>A. true B. false</p> <p>C. truefalse D. false>true</p> <p>E. No output due to runtime exception</p>	<pre>boolean a = false, b=!a; out.print(a (!b&&!a));</pre>
<p>QUESTION 19</p> <p>What is output by the code to the right?</p> <p>A. 5 B. 3 C. 4 D. 12</p> <p>E. No output due to runtime exception</p>	<pre>ArrayList<Integer> lst; lst = new ArrayList<>(); lst.add(12); lst.add(17); lst.add(27); lst.ensureCapacity(5); out.println(lst.size());</pre>
<p>QUESTION 20</p> <p>What is output by the code to the right?</p> <p>A. 0.5 B. -0.0 C. -0.5 D. 0.0 E. -1.0</p>	<pre>out.printf("%1.1f", -5 % 0.9);</pre>
<p>QUESTION 21</p> <p>What is output by the code to the right?</p> <p>A. 10 B. 14 C. 15 D. 12 E. 13</p>	<pre>int i = 27; while (--i + 5 >= 19) { i = ++i - 1; } out.println(i);</pre>

QUESTION 22

What is output by the code to the right?

- A. 6 B. 7 C. 9 D. 30
E. No output due to runtime exception

```
static int fun2(int a, int b) {
    if (a % b == 1) {
        return 6;
    }
    else if (b % a == 3) {
        return 7;
    }
    return 9;
}

////////////////////////////////////
// Client code
out.println(fun2(9, 30));
```

QUESTION 23

What is output by the code to the right?

- A. hawkhawk
B. hawkhawkhawk
C. hawk
D. hawkhawkhawkhawk
E. hawkhawkhawkhawkhawk

```
static String fun3(String a, int b)
{
    if (b >= a.length()) {
        return a + a;
    }
    else {
        return a + a + a;
    }
}

////////////////////////////////////
// Client code
out.println(fun3("hawk", 5));
```

QUESTION 24

Consider the two classes to the right. What is the output from the following code?

```
B x = new C();
out.println(x.fun1("Hi"));
```

- A. Hi B. HiHi
C. HiHiHi D. HiHiHiHi
E. No output due to exception

```
class B {
    String fun1(String a) {
        return a + a;
    }
}
```

QUESTION 25

Consider the two classes to the right. What is the output from the following code?

```
C x = new B();
out.println(x.fun1("Hi"));
```

- A. Hi B. HiHi
C. HiHiHi D. HiHiHiHi
E. No output due to exception

```
class C extends B {
    String fun1(String a) {
        return super.fun1(a + a);
    }
}
```

QUESTION 26

Consider the three classes to the right. What is the output from the following code?

```
D x = new F();
x.fun2();
```

- A. HiWhatHuh?
- B. WhatHuh?Hi
- C. WhatHiHuh?
- D. WhatHuh?
- E. Huh?WhatHi

```
class D{
    void fun2() {
        out.print("Hi");
    }
}
class E extends D {
    void fun2() {
        out.print("What");
        super.fun2();
    }
}
class F extends E {
    void fun2() {
        super.fun2();
        out.print("Huh?");
    }
}
```

QUESTION 27

What is output by the code to the right?

- A. [8, 6, 4, 2, 0]
- B. [0, 0, 0, 0, 0]
- C. [0, 2, 4, 6, 8]
- D. [8, 6, 4, 2]
- E. [6, 4, 2, 0]

```
int[] ray = new int[5];
for (int i=ray.length-1; i>=0; --i)
{
    ray[ray.length-1-i]=i*2;
}
out.println(Arrays.toString(ray));
```

QUESTION 28

What is output by the code to the right?

- A. [16.0, 16.0, 16.0, 16.0, 32.0]
- B. [32.0, 32.0, 16.0, 10.0, 8.0]
- C. [Infinity, 32.0, 16.0, 10.0, 8.0]
- D. [32.0, 16.0, 10.0, 8.0, 32.0]
- E. No output due to runtime exception

```
double[] ray = new double[5];
Arrays.fill(ray, 32);
for (int i=1; i<ray.length; i++) {
    ray[i-1] = (int)(ray[i] / i);
}
out.println(Arrays.toString(ray));
```

QUESTION 29

What is output by the code to the right?

- A. 53
- B. 51
- C. 48
- D. 54
- E. 44

```
static int fun3(int a) {
    if (a < 9)
        return fun3(++a) + a;
    return a;
}

////////////////////////////////////
// client code
out.println(fun3(2));
```

QUESTION 30

What is output by the code to the right?

- A. ekcihCkcihCcihCihChCC
- B. keicChicChCh
- C. ChCihCcihCkcihC
- D. kcihCcihCihChCC
- E. No output due to runtime exception

```
static String fun4(String s) {
    if (s.length() < 5) {
        String tmp =
            "ChickenHawk".substring(
                s.length(), s.length() + 1);
        return fun4(tmp + s) + s;
    }
    return s;
}

////////////////////////////////////
// Client code
out.println(fun4(""));
```

QUESTION 31

What is output by the code to the right?

- A. 16f
- B. 567
- C. 27c
- D. 367
- E. 16

```
int x = Integer.parseInt("16f", 16);
int y = Integer.parseInt("27c", 15);
out.println(Math.max(x, y));
```

QUESTION 32

What is output by the code to the right?

- A. 1001110
- B. 0
- C. 10011100
- D. 100111
- E. 156

```
int x = 10010 >> 7;
out.print(Integer.toBinaryString(x));
```

QUESTION 33

What is the output from the code on the right if the following code replaces **< ** 1 ** >**?

```
out.println(s);
```

- A. [platypus, PLATYpus, chicken, Chicken, cHiCkEn, cHICKEN]
- B. [cHICKEN, cHiCkEn, Chicken, chicken, PLATYpus, platypus]
- C. [Chicken, PLATYpus, cHICKEN, cHiCkEn, chicken, platypus]
- D. [platypus, chicken, cHiCkEn, cHICKEN, PLATYpus, Chicken]
- E. No output due to runtime exception

```
class A implements Comparable<A> {
    private String s;
    public A(String s) {
        this.s = s;
    }
    public int compareTo(A other) {
        if (s.equals(other.s)) return 0;
        return getVal() > other.getVal()
            ? -1 : 1;
    }
    private int getVal() {
        int x = 0;
        for (char c: s.toCharArray())
            x += (int)c;
        return x;
    }
    public String toString() {
        return s;
    }
}
```

```
////////////////////////////////////
// Client Code
TreeSet<A> s = new TreeSet<>();
s.add(new A("Chicken"));
s.add(new A("chicken"));
s.add(new A("cHICKEN"));
s.add(new A("Chicken"));
s.add(new A("cHiCkEn"));
s.add(new A("platypus"));
s.add(new A("PLATYpus"));
```

< ** 1 ** >

QUESTION 34

What is the output from the code on the right if the following code replaces **< ** 1 ** >**?

```
out.println(s.floor(new A("ChihUaHua")));
```

- A. platypus B. Chicken
- C. cHiCkEn D. PLATYpus
- E. No output due to error

QUESTION 35

What is output by the code to the right?

- A. {1=2.0, 1=2.5, 3=3.5, 3=3.7}
- B. {1=2.0, 1=2.5, 3=3.7}
- C. {2.0=1, 2.5=1, 3.0=7, 3.5=3, 3.7=3}
- D. {2.0=1, 2.5=1, 3.5=3, 3.7=3}
- E. {2.5=1, 2.0=1, 3.7=3, 3.5=2}

```
Map<Double, Integer> mp;
mp = new TreeMap<>();
mp.put(2.5, 1);
mp.put(2.0, 1);
mp.put(3.0, 7);
mp.put(3.7, 3);
mp.put(3.5, 2);
mp.remove(3.0);
out.println(mp);
```

<p>QUESTION 36</p> <p>What is output by the code to the right?</p> <p>A. 37392 B. 39293 C. 39292 D. 37292</p> <p>E. No output due to runtime error</p>	<pre>LinkedList<Integer> lst; lst = new LinkedList<>(); lst.add(37); lst.add(39); out.print(lst.peek()); lst.add(29); lst.remove(37); out.print(lst.peek()); out.print(lst.size());</pre>
<p>QUESTION 37</p> <p>What is output by the code to the right?</p> <p>A. 171717 B. 1728null</p> <p>C. 171728 D. 171717</p> <p>E. 17null128</p>	<pre>PriorityQueue<Integer> pq; pq = new PriorityQueue<>(); pq.add(17); pq.add(28); out.print(pq.peek()); out.print(pq.poll()); out.print(pq.peek());</pre>
<p>QUESTION 38</p> <p>What is output by the code to the right?</p> <p>A. 10 B. 1010 C. 1 D. 1439 E. 17</p>	<pre>int x = 0; int num = 0b1011010010; for (int i=num; i>0; i=i>>1) { x += i; } out.println(x);</pre>
<p>QUESTION 39</p> <p>What is output by the code to the right?</p> <p>A. 61995 B. f22b C. 171053</p> <p>D. 1111001000101011</p> <p>E. No output due to runtime exception</p>	<pre>int i=39; i += 0xf26f; i -= 0b1101011; out.println(i);</pre>
<p>QUESTION 40</p> <p>What is output by the code to the right?</p> <p>A. Integer.MIN_VALUE</p> <p>B. Integer.MAX_VALUE</p> <p>C. 1</p> <p>D. -1</p> <p>E. No output due to runtime exception</p>	<pre>out.println(Integer.MIN_VALUE ^ Integer.MAX_VALUE);</pre>