

Note: Correct responses are based on Java, J2sdk v 6.0, 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.

QUESTION 1

What is 15_8 plus 22_8 ?

- A. 34_8 B. 32_{10} C. $1E_{16}$ D. 37_8 E. 31_8

QUESTION 2

What is output by the code to the right?

- A. 9 B. 16 C. 17 D. 10 E. 18

```
int num1 = 4;
int num2 = 13;
System.out.println(num2 + num1);
```

QUESTION 3

What is output by the code to the right?

- A. 9 B. 11 C. 10 D. 20 E. 0

```
int total = 0;
total += 2;
total -= 3;
total += 6;
total *= 2;
System.out.println(total);
```

QUESTION 4

What is output by the code to the right?

- A. 14 B. 13 C. 17 D. 19 E. 12

```
int sum = 0;
for(int i = 12; i > -1; i--)
    sum++;
System.out.println(sum);
```

QUESTION 5

What is output by the code to the right?

- A. rain B. raining C. eraining
D. ain E. bringtheing

```
String thing = "bringtherain";
thing = thing.substring(8);
System.out.println(thing + "ing");
```

QUESTION 6

What is output by the code to the right?

- A. 14 B. 15 C. 17 D. 19 E. 21

```
int[] ar = {12, 3, 9, 2, 5};
System.out.println(ar[0]+ar[ar[3]]);
```

QUESTION 7

What is output by the code to the right?

- A. true true
B. true false
C. false true
D. false true false
E. false false

```
boolean one = true;
boolean two = false;
System.out.print(one ^ two);
System.out.print(" ");
System.out.print(two || one && !two);
```

QUESTION 8

What is output by the code to the right?

- A. 2 5
B. 12 10
C. 12 4
D. 2 10
E. 12 5

```
int red = 12;
int blue = 5;
if(red > blue * 2) {
    if(blue < red)
        blue *= 2;
    else
        blue--;
} else
    red -= 10;
System.out.println(red + " " + blue);
```

<p>QUESTION 9</p> <p>What is output by the code to the right?</p> <p>A. 5 B. 5.0 C. 10.0 D. 10 E. 6.0</p>	<pre>System.out.println(5 + 2 * 2.0 - 4);</pre>
<p>QUESTION 10</p> <p>What is the output of the client code to the right ?</p> <p>A. 4 B. 13 C. 17 D. 18 E. 12</p>	<pre>public class Thingy { private int num1; private int num2; private static int num3; public Thingy(int n1, int n2) { num1 = n1; num2 = n2; num3 += n1 + n2; } public int getBunches() { return num3; } } //////////////////////////////////// //client code Thingy t = new Thingy(5, 2); t = new Thingy(4, 6); Thingy g = new Thingy(-5,1); System.out.println(g.getBunches());</pre>
<p>QUESTION 11</p> <p>What is output by the code to the right?</p> <p>A. 125 B. 125.0 C. 243 D. 243.0 E. 15.0</p>	<pre>System.out.println(Math.pow(5, 3));</pre>
<p>QUESTION 12</p> <p>What is output by the code to the right?</p> <p>A. , , , , , 5345 B. 0,005,345 C. 0005,345 D. 000005345 E. 5345</p>	<pre>String format = "%0,8d"; int number = 5345; System.out.printf(format,number);</pre>
<p>QUESTION 13</p> <p>What is output by the code to the right?</p> <p>A. "quotes\" B. \"quotes\\ C. "quotes" D. "quotes\ E. \quotes\</p>	<pre>System.out.println("\"quotes\\");</pre>
<p>QUESTION 14</p> <p>What is output by the code to the right?</p> <p>A. 2 B. 3 C. 0 D. 1 E. 4</p>	<pre>int[][] mat = {{1, 2, 3, 4}, {2, 3, 4, 5}, {3, 4, 5, 6}}; System.out.println(mat.length+1);</pre>

<p>QUESTION 15</p> <p>How many “*”s will be output by the code to the right?</p> <p>A. 10 B. 15 C. 25 D. 30 E. 40</p>	<pre>for(int i = 0; i < 5; i++) { for(int j = i; j>0; j--) System.out.println("*"); System.out.println("*"); }</pre>
<p>QUESTION 16</p> <p>What is output by the code to the right?</p> <p>A. 000012340000000000000005 B. 0123405 C. abcd0grh!!exclaim0 D. abcd0000grh!!exclaim0 E. 012340!!05</p>	<pre>String str = "abcd1234grh!!exclaim5"; str = str.replaceAll("\\D+", "0"); System.out.println(str);</pre>
<p>QUESTION 17</p> <p>What is output by the code to the right?</p> <p>A. 8 B. 12 C. 4 D. 0 E. 16</p>	<pre>int bytes = 8; int nibbles = 4; System.out.println(bytes nibbles);</pre>
<p>QUESTION 18</p> <p>What is output by the code to the right?</p> <p>A. 11 B. 12 C. 1 D. 2 E. 10</p>	<pre>int b1 = 1; if((b1 > 1 b1++ > 1) && ++b1 > -1) b1 += 10; System.out.println(b1);</pre>
<p>QUESTION 19</p> <p>What is output by the code to the right?</p> <p>A. [blag, blago, hair] B. [blago, blag, hair] C. [hair, blago, blag] D. [bla, blag, blago, hair] E. [blago, blago, hair]</p>	<pre>ArrayList<String> arst; arst = new ArrayList<String>(); arst.add("bla"); arst.add("blag"); arst.set(0, "blago"); arst.add("hair"); Collections.sort(arst); System.out.println(arst);</pre>
<p>QUESTION 20</p> <p>What is output by the code to the right?</p> <p>A. 10 22 B. 2 0 C. 2 10 D. 10 2 E. There is no output due to a runtime error.</p>	<pre>int p = 10; int c = 22; System.out.print(c / p % 5); System.out.print(" "); System.out.print(c % p * 5);</pre>
<p>QUESTION 21</p> <p>What is output by the code to the right?</p> <p>A. 8 B. 20 C. 10 D. 18 E. 22</p>	<pre>String key = "bccddadebdcaz"; String ans = "bcdebdeedcay"; int score = 0; int i = 0; while(i < key.length()) { int con = 0; while(i < key.length() && key.charAt(i)==ans.charAt(i++)) con++; score += con * con; } System.out.println(score);</pre>

QUESTION 22

What is returned by the method call `test(2, 2)`?

- A. 5 B. -5 C. 0 D. true E. false

QUESTION 23

What is returned by the method call `test(2.0, 2.0)`?

- A. 5 B. -5 C. 0 D. true E. false

QUESTION 24

What replaces **<*1>** in the code to the right so that method `addX` does not have a return value?

- A. null
B. nothing
C. void
D. NUL
E. nop

Assume **<*1>** is filled in correctly.

QUESTION 25

What is output by the line marked **//1** in the client code to the right?

- A. 24
B. 17
C. 10
D. 22
E. 27

QUESTION 26

What is output by the line marked **//2** in the client code to the right?

- A. 30
B. 29
C. 2727
D. 2222
E. 3030

```
public int test(Object o1, Object o2)
{
    int ret = 0;
    if(o1==o2)
        ret = 5;
    else
        ret = -5;
    return ret;
}
```

```
public class Papi {
    private int x = 7;
    public Papi(int n) {
        x = n;
    }
    public <*1> addX(int n) {
        x += n;
    }
    public String toString() {
        return "" + x;
    }
}
```

```
public class Son extends Papi {
    public Son(int n) {
        super(n*2);
    }
    public void addX(int n) {
        super.addX(n);
        super.addX(n);
    }
    public String toString() {
        String str = super.toString();
        return str + str;
    }
}
```

```
////////////////////////////////////
//client code
Papi pops = new Papi(5);
pops.addX(5);
pops.addX(12);
System.out.println(pops);    //1
pops = new Son(3);
pops.addX(4);
pops.addX(8);
System.out.println(pops);    //2
```

QUESTION 27

What type of sort is the code to the right ?

- A. insertion sort
- B. merge sort
- C. quick sort
- D. radix sort
- E. selection sort

```
int[] stf = {6,4,7,1,5,9,10,12,-2};
for(int i = 0; i<stf.length-1; i++) {
    int min = i;
    for(int j=i+1; j<stf.length; j++) {
        if(stf[min]<stf[j])
            min = j;
    }
    int temp = stf[min];
    stf[min] = stf[i];
    stf[i] = temp;
}
System.out.println(
    Arrays.toString(stf));
```

QUESTION 28

What is output by the code to the right?

- A. [-2, 1, 4, 5, 6, 7, 9, 10, 12]
- B. [6, 4, 7, 1, 5, 9, 10, 12, -2]
- C. [12, 10, 9, 7, 6, 5, 4, 1, -2]
- D. There is no output due to a syntax error.
- E. There is no output due to a runtime error.

QUESTION 29

What is returned by the method call `rec(4)` ?

- A. 3
- B. 4
- C. 5
- D. 7
- E. 8

```
public static int rec(int n) {
    if(n <= 0)
        return 1;
    return rec(n/2) + rec(0);
}
```

QUESTION 30

What is returned by the method call `rec(2048)` ?

- A. 10
- B. 12
- C. 13
- D. 15
- E. 20

QUESTION 31

What is output by the code to the right?

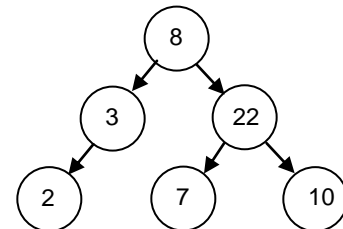
- A. 35
- B. 43
- C. 44
- D. 47
- E. 48

```
int a = Integer.parseInt("1F",17);
int b = Integer.parseInt("121",3);
String s = Integer.toString(a+b,11);
System.out.println(s);
```

QUESTION 32

How many leaves are in the tree to the right ?

- A. 1
- B. 2
- C. 3
- D. 4
- E. 6



QUESTION 33

What replaces **<*1>** in the code to the right so that variable `tac` will be defined and initialized as a `Stack` that will contain objects of type `String`?

- A. `String<Stack>`
- B. `Stack[String]`
- C. `Object<Stack.String>`
- D. `Stack<String>`
- E. Both A and B are correct.

QUESTION 34

What replaces **<*2>** in the code to the right so that the object at the top of the stack is removed and printed?

- A. `remove`
- B. `pop`
- C. `peek`
- D. `put`
- E. More than one of these is correct.

```
<*1> tac = new <*1>();
tac.push("a");
tac.push("b");
tac.push("c");
tac.push("d");
while(!tac.isEmpty())
    System.out.print(tac.<*2>()+" ");
```

QUESTION 35

Assuming that **<*1>** and **<*2>** are filled correctly, what is output by the code to the right?

- A. a b c d
- B. d d d d
- C. d c b a
- D. b c b a
- E. a d c d

QUESTION 36

What is output by the line marked **//1** in the code to the right?

- A. [6, 8, 1]
- B. [6, 7, 8, 9, 1, 2]
- C. [2, 1, 9, 8, 7, 6]
- D. There is no output due to a syntax error.
- E. There is no output due to a runtime error.

```
Queue<Integer> q;
q = new LinkedList<Integer>() {
    public boolean add(Integer i) {
        super.add(i);
        return super.add(i+1);
    }
};
q.add(6);
q.add(8);
q.add(1);
System.out.println(q); //1
```

QUESTION 37

What is output by the line marked **//2** in the code to the right?

- A. 1 B. 2 C. 8
- D. There is no output due to a syntax error.
- E. There is no output due to a runtime error.

```
PriorityQueue<Integer> pq;
pq = new PriorityQueue<Integer>(q);
pq.remove();
System.out.println(pq.remove()); //2
```

<p>QUESTION 38</p> <p>What is output by the code to the right?</p> <p>A. 0 B. 2 C. 32 D. 8 E. 16</p>	<pre>int bitsie = 1 << 4 2 & 8 >>> 3; System.out.println(bitsie);</pre>
<p>QUESTION 39</p> <p>What is output by the line marked //1 in the code to the right?</p> <p>A. 3 B. 5 C. 6 D. 7 E. 0</p>	<pre>String it = "abc!32!gc!kd!2!342"; String[] si = it.split("!"); System.out.println(si.length); //1</pre>
<p>QUESTION 40</p> <p>What is output by the line marked //2 in the code to the right?</p> <p>A. [, 32, , , 2, 342]</p> <p>B. [32, 2, 342]</p> <p>C. [abc, 32, gc, kd, 2, 342]</p> <p>D. [abc, , gc, kd, ,]</p> <p>E. [abc, gc, kd]</p>	<pre>for(int i = 0; i < si.length; i++) if(si[i].matches("\\d+")) si[i] = ""; List<String> li = Arrays.asList(si); System.out.println(li); //2</pre>