

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 357_8 minus 213_4 ?

- A. 300_8 B. 3030_4 C. DB_{16} D. $C8_{16}$ E. 11001100_2

QUESTION 2

What is output by the code to the right?

- A. 11 B. 23 C. 45 D. 90 E. 0

```
int el = 11;
int fi = 5;
int t = 3;
System.out.println(el + fi * t - t);
```

QUESTION 3

What is output by the code to the right?

- A. -5 13 B. 11 -3 C. 0 8 D. 13 13 E. 21 13

```
int a = 8;
int b = 5;
b += a;
a -= b;
System.out.println(a + " " + b);
```

QUESTION 4

What is output by the code to the right?

- A. 7 B. 8 C. 6 D. 14 E. 12

```
int count = 0;
for(int j=-2; j>=-8; j--) {
    count += 2;
}
System.out.println(count);
```

QUESTION 5

What is output by the code to the right?

- A. two123zyx987
B. twoabcl
C. 123zyx987two
D. abcltwo
E. twoabcl123zyx987

```
String str = "abc123zyx987";
String rts = "two";
str.substring(str.indexOf("1"));
System.out.println(rts + str);
```

QUESTION 6

What is output by the code to the right?

- A. 6 B. 5 C. 0
D. There is no output due to a syntax error.
E. There is no output due to a runtime error.

```
short[] ars = {1,2,3,4,5};
ars[0] = (short)ars[0] + ars[4];
System.out.println(ars[0]);
```

QUESTION 7

How many combinations of values for the boolean variables on, tw, and th will result in end being set to true?

- A. 1 B. 2 C. 3 D. 5 E. 7

```
boolean on, tw, th;
//code to initialize on, tw, and th

boolean end = on & tw || th;
```

QUESTION 8

What is output by the code to the right?

- A. 8 B. 80 C. 138 D. 830 E. 0

```
int thing = 8;
switch(thing) {
case 1:
    System.out.print(1);
case 3:
    System.out.print(3);
case 8:
    System.out.print(8);
default:
    System.out.print(0);
}
```

QUESTION 9

What is output by the code to the right?

- A. 8.0 B. 8 C. 9.0
D. There is no output due to a syntax error.
E. There is no output due to a runtime error.

```
Integer num = (int)(5 * 1.5);
Double dum = num + 1;
System.out.println(num + dum);
```

QUESTION 10

What is output by the client code to the right?

- A. yes B. null C. no
D. There is no output due to a syntax error.
E. There is no output due to a runtime error.

```
public class Cls {
    public String ivar;
    public Cls() {
        super();
        ivar = "yes";
    }
    public String getMessage() {
        return ivar;
    }
}

//client code
Cls c = new Cls(){{ivar = "no";}};
System.out.println(c.getMessage());
```

QUESTION 11

What is output by the code to the right ?

- A. 1 B. 1.0 C. 2
D. There is no output due to a syntax error.
E. There is no output due to a runtime error.

```
int num = Math.round(1.5);
System.out.println(num);
```

QUESTION 12

What is output by the code to the right ?

- A. 0 B. null C. false
D. There is no output due to a syntax error.
E. There is no output due to a runtime error.

```
Integer num = null;
System.out.printf("%h", num);
```

<p>QUESTION 13</p> <p>How many lines are output by the code to the right ?</p> <p>A. 1 B. 2 C. 3 D. 4 E. 5</p>	<pre>System.out.println("a\n"); System.out.println("b\n"); System.out.print(6);</pre>
<p>QUESTION 14</p> <p>What is the output by the code to the right ?</p> <p>A. 13 B. 14 C. 29 D. 30 E. 0</p>	<pre>int[][] stuffs = new int[][]{ {3, 6, 3}, {7, 8, 4}, {4, 3, 5}}; int sum = 0; sum += stuffs[0][0]+stuffs[1][1]; sum += stuffs[2][2]-stuffs[0][2]; System.out.println(sum);</pre>
<p>QUESTION 15</p> <p>What is the output by the code to the right ?</p> <p>A. 18 B. 19 C. 9 D. 20 E. 201</p>	<pre>int all = 1; for(int i=1; i<1500; i*=2) all += i/100; System.out.println(all);</pre>
<p>QUESTION 16</p> <p>What is the output by the code to the right ?</p> <p>A. 1 B. 7 C. 8 D. 9 E. 0</p>	<pre>String s = "abcdefg"; String[] sa = s.split(""); System.out.println(sa.length);</pre>
<p>QUESTION 17</p> <p>What is the output by the code to the right ?</p> <p>A. 0 B. 3 C. 12 D. 24 E. 48</p>	<pre>System.out.println(3 << 2 >> 5 << 7);</pre>
<p>QUESTION 18</p> <p>What is the output by the code to the right ?</p> <p>A. truefalsefalse B. truefalsetrue C. falsefalsefalse D. There is no output due to a syntax error. E. There is no output due to a runtime error.</p>	<pre>boolean b = new Boolean("TRUE"); boolean c = new Boolean("F"); boolean d = new Boolean(null); System.out.print("" + b + c + d);</pre>

<p>QUESTION 19</p> <p>What is the output by the code to the right ?</p> <p>A. 02468</p> <p>B. 0123456789</p> <p>C. 012345678910</p> <p>D. There is no output due to a syntax error.</p> <p>E. There is no output due to a runtime error.</p>	<pre>ArrayList<Integer> list; list = new ArrayList<Integer>(); for(int i=0; i<10; i++) { list.add(i); } for(int i=0; i<10; i++) { System.out.print(list.remove(i)); list.add(0,i); }</pre>
<p>QUESTION 20</p> <p>What is the output by the code to the right ?</p> <p>A. 3.5 1.5</p> <p>B. 3.75 2.5</p> <p>C. 7.5 2.5</p> <p>D. 3.75 1.5</p> <p>E. 2.5 3.75</p>	<pre>double alpha = 7.5; double beta = 2.0; System.out.print(alpha / beta); System.out.print(" "); System.out.print(alpha % beta);</pre>
<p>QUESTION 21</p> <p>What is the output by the code to the right ?</p> <p>A. 77555</p> <p>B. 77575</p> <p>C. 77755</p> <p>D. 55775</p> <p>E. 75757</p>	<pre>boolean[] boo = new boolean[5]; for(int i=0; i<6; i++) { int j = boo.length-1; do{ boo[j] = !boo[j]; }while(boo[j] && --j>=0); } for(int i=0; i<boo.length; i++) { System.out.print(boo[i]?7:5); }</pre>
<p>QUESTION 22</p> <p>What is output by the line marked //1 in the client code to the right?</p> <p>A. 0 B. 1 C. 2</p> <p>D. There is no output due to a syntax error.</p> <p>E. There is no output due to a runtime error.</p>	<pre>public int m(String s, Object o) { if(s==o) return 0; if(s.equals(o)) return 1; return 2; }</pre>
<p>QUESTION 23</p> <p>What is output by the line marked //2 in the client code to the right?</p> <p>A. 0 B. 1 C. 2</p> <p>D. There is no output due to a syntax error.</p> <p>E. There is no output due to a runtime error.</p>	<pre>//client code String s1 = new String("hey"); String s2 = "hey"; String s3 = "hey"; System.out.println(m(s1,s2)); //1 System.out.println(m(s2,s3)); //2</pre>

QUESTION 24

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

- A. 0 B. 5 C. 7
 D. There is no output due to a syntax error.
 E. There is no output due to a runtime error.

QUESTION 25

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

- A. 0 7 B. 5 7 C. 7 7
 D. There is no output due to a syntax error.
 E. There is no output due to a runtime error.

QUESTION 26

What is output by the line marked **//3** in the client code to the right?

- A. 0 B. 4 C. 4 4
 D. There is no output due to a syntax error.
 E. There is no output due to a runtime error.

```
public class A {
    public int num;
    public A() {
        num = 0;
    }
    public A(int n) {
        num = n;
    }
    public String toString() {
        return "" + num;
    }
}

public class B extends A {

    public B(int n) {
        num = n;
    }
    public String toString() {
        return super.toString()+" "+num;
    }
}

//client code
A a = new A(5);
System.out.println(a);           //1

B b = new B(7);
System.out.println(b);           //2

B c = new B(4){
    public String toString() {
        return super.toString();
    }
};
System.out.println(c);           //3
```

QUESTION 27

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

- A. [5, 7, 3, 5, 9, 6, 2]
- B. [2, 3, 5, 5, 6, 7, 9]
- C. [3, 5, 5, 2, 6, 7, 9]
- D. [5, 3, 7, 5, 9, 2, 6]
- E. [5, 3, 5, 7, 6, 2, 9]

```
int[] ns = {5,7,3,5,9,6,2};
int count = 0;
boolean apple;
do {
    apple = false;
    for(int i=0; i<ns.length-1; i++) {
        if(ns[i]>ns[i+1]) {
            int t = ns[i];
            ns[i] = ns[i+1];
            ns[i+1] = t;
            apple = true;
            count++;
        }
    }
} while(apple);

String str = Arrays.toString(ns);
System.out.println(str);           //1
System.out.println(count);         //2
```

QUESTION 28

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

- A. 3
- B. 4
- C. 7
- D. 11
- E. 12

QUESTION 29

What is returned by the method call gla ("ABC")?

- A. 0
- B. 1
- C. 2
- D. 3
- E. 4

```
public int gla(String str) {
    if(str.length()==0)
        return 0;
    int num = str.charAt(0);
    str = str.substring(1);
    return num+gla(str)-65;
}
```

QUESTION 30

What is returned by the method call gla ("GEaB")?

- A. 5
- B. 11
- C. 27
- D. 43
- E. 97

QUESTION 31

What is the output by the code to the right.

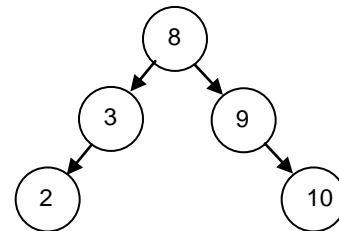
- A. 100
- B. A0
- C. A6
- D. There is no output due to a syntax error.
- E. There is no output due to a runtime error.

```
int a = Integer.parseInt("5F",18);
int b = Integer.parseInt("121",2);
String s = Integer.toString(a+b,11);
System.out.println(s);
```

QUESTION 32

What type of data structure is the tree to the right ?

- A. AVL Tree
- B. Max Heap
- C. Min Heap
- D. Binary Search Tree
- E. Stack



QUESTION 33

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

- A. a
- B. b
- C. c
- D. g
- E. null

```
HashMap<Integer, Character> m;
m = new HashMap<Integer,Character>();
String s = "abcgebc";
```

```
int i = 0;
for(char c : s.toCharArray()) {
    i += 3;
    m.put(i++, c);
}
```

```
for(char c : s.toCharArray()) {
    Set<Integer> st;
    st = new HashSet(m.keySet());
    for(int n : st) {
        if(m.get(n)==c) {
            m.remove(n);
            m.put(n+1, c);
        }
    }
}
```

```
System.out.println(m.get(4)); //1
System.out.println(m.get(8)); //2
System.out.println(m); //3
```

QUESTION 34

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

- A. a
- B. b
- C. c
- D. g
- E. null

QUESTION 35

What is output by the line marked **//3** in the client code to the right?

- A. {16=g, 33=c, 4=a, 20=g, 9=b, 24=e, 29=b}
- B. {16=g, 4=a, 20=e, 25=b, 9=b, 29=c, 13=c}
- C. {16=a, 4=g, 20=e, 25=b, 9=b, 29=c, 13=c}
- D. {12=g, 4=a, 20=e, 33=b, 9=b, 29=c, 13=c}
- E. {16=l, 4=a, 20=e, 25=b, 9=b, 29=c, 13=c}

QUESTION 36

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

- A. 1
- B. 3
- C. -4
- D. 0
- E. -2

```
Queue<Integer> q;
q = new LinkedList<Integer>();
q.add(0);
```

```
for(int i=0; i<12; i++) {
    int num = q.remove();
    q.add(num-1);
    q.add(num+1);
}
```

```
q.remove();
q.remove();
```

```
System.out.println(q.remove()); //1
```

```
System.out.println(q.size()); //2
```

QUESTION 37

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

- A. 8
- B. 9
- C. 10
- D. 11
- E. 12

<p>QUESTION 38</p> <p>What is the output by the code to the right ?</p> <p>A. 0</p> <p>B. -2147483648</p> <p>C. -1</p> <p>D. 65535</p> <p>E. 2147483647</p>	<pre>int num = Integer.MAX_VALUE; int num2 = (char)num; System.out.println(num2);</pre>
<p>QUESTION 39</p> <p>What is output by the line marked //1 in the client code to the right?</p> <p>A. (\$0) (\$0) (\$0) (\$0)</p> <p>B. these are the words</p> <p>C. (these) (are) (the) (words)</p> <p>D. null</p> <p>E. There is no output due to a runtime error.</p>	<pre>String str = "these are the words "; str = str.replaceAll("\\w+", "(\$0)"); System.out.println(str); //1</pre>
<p>QUESTION 40</p> <p>What is output by the line marked //2 in the client code to the right?</p> <p>A. true</p> <p>B. false</p> <p>C. 1</p> <p>D. 0</p> <p>E. maybe</p>	<pre>String mat = "(\\(\\w+\\))+"; boolean answer = str.matches(mat); System.out.println(answer); //2</pre>