

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 the result of 100111010_2 minus AA_{16} ?

- A. 10010001_2 B. 11101110_2 C. $A0_{16}$ D. 220_8 E. 122_{10}

QUESTION 2

What is output by the code to the right?

- A. 0.0 B. 3.3333 C. 3.0 D. 0 E. 3

```
int x = 10;
int y = 3;
System.out.println(x / y);
```

QUESTION 3

What is output by the code to the right?

- A. 8 B. 8.0 C. 9 D. 9.0 E. 6

```
System.out.println(Math.pow(3,2));
```

QUESTION 4

What is output by the code to the right?

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

```
char[] a = new char[9];
System.out.println(a[5/8]+1);
```

QUESTION 5

What is output by the code to the right?

- A. uilw
B. UILW
C. Winners
D. winners
E. inners

```
String s = new String("UILWinners");
System.out.print(s.substring(4));
```

QUESTION 6

What is output by the code to the right?

- A. 0 B. 2 C. 3 D. 4 E. 6

```
int x=0;
for(int i=3;i<14;i+=2)
    x++;
System.out.println(x);
```

QUESTION 7

What is output by the code to the right?

- A. 0
B. 1.44
C. 3.44
D. 1.0
E. 1

```
double x = 3.44;
int y = 2;
System.out.print( x % y);
```

QUESTION 8

What is output by the code to the right?

- A. 5 B. 48
C. 32 D. 128
E. 256

```
System.out.print( 16 << 3 );
```

<p>QUESTION 9</p> <p>How many instance variables are in the code to the right ?</p> <p>A. 0 B. 2 C. 3 D. 4 E. 5</p>	<pre>public class Sum { private int num1,num2,sum; public Sum(){ num1=0; num2=0; } public Sum(int a, int b){ num1=a; num2=b; } public void sum(){ sum=num1+num2; } public void print(){ System.out.println(sum); } }</pre>
<p>QUESTION 10</p> <p>How many accessor methods are in the code to the right ?</p> <p>A. 0 B. 1 C. 2 D. 3 E. 4</p>	
<p>QUESTION 11</p> <p>How many constructors are in the code to the right ?</p> <p>A. 0 B. 1 C. 2 D. 3 E. 4</p>	
<p>QUESTION 12</p> <p>What is output by the code to the right ?</p> <p>A. x00000023.4fx B. x23.4x C. x23.5x D. x000000023.5fx E. x000000023.4fx</p>	<pre>double x = 23.45678; System.out.printf("x0%010.1ffx\n",x);</pre>
<p>QUESTION 13</p> <p>What is returned by the method call <code>myst(3,2)</code> ?</p> <p>A. 6 B. 6.0 C. 4 D. 4.0 E. 9</p>	<pre>public static int myst(int x, int y){ return y*y; }</pre>
<p>QUESTION 14</p> <p>What is output by the code to the right ?</p> <p>A. 0 B. 4 C. true D. false E. a</p>	<pre>int x = 8; boolean a = false; boolean b = true; System.out.println((x%2==0) ? b : a);</pre>
<p>QUESTION 15</p> <p>What is output by the code to the right ?</p> <p>A. GHIJKL B. LKJIHG C. HIJKL D. LKJIH E. L</p>	<pre>for(char a='L';a>='G';a--){ System.out.print(a); }</pre>
<p>QUESTION 16</p> <p>What is output by the code to the right if <code>String s = "AaA";</code></p> <p>A. aza B. AzA C. Aza D. za E. z</p>	<pre>for(int i=1;i<s.length();i++){ switch(s.charAt(i)){ case 'A' : out.print("a"); break; case 'E' : out.print("b"); break; case 'I' : out.print("c"); break; default : out.print("z"); } }</pre>
<p>QUESTION 17</p> <p>What is output by the code to the right if <code>String s = "QUIT";</code></p> <p>A. zcz B. QUIT C. zzcz D. cz E. z</p>	

QUESTION 18

Which of the following could replace `<*1>` in the code to the right so the value of `x` is assigned 1984 ?

- A. `Integer.parseInt(s)`
- B. `Integer.valueOf(s)`
- C. `s.intValue()`
- D. A and C only
- E. A and B only

```
String s = "1984";
int x = <*1>;
```

QUESTION 19

What is returned by the method call `myst(5)` ?

- A. 5
- B. 10
- C. 20
- D. 30
- E. 32

```
public static int myst(int x){
    if(x==0) return 1;
    else return 2 * myst(x-1);
}
```

QUESTION 20

What is the value of `m[3][4]` when the code to the right is executed ?

- A. 0
- B. 3
- C. 12
- D. 5
- E. 9

```
int[][] m = new int [5][5];
for(int c=0; c<m[0].length; c++)
    for(int r=0; r<m.length; r++)
        m[r][c]=r*c;
```

QUESTION 21

What is the value of `m[0][3]` when the code to the right is executed ?

- A. 0
- B. 3
- C. 12
- D. 5
- E. 9

QUESTION 22

What is output by the code to the right ?

- A. -3
- B. -2
- C. -1
- D. true
- E. false

```
ArrayList <Integer> m;
m = new ArrayList <Integer>();
m.add(3);
m.add(6);
m.add(27);
int a=Collections.binarySearch(m,22);
System.out.println(a);
```

QUESTION 23

What is output by the code to the right ?

- A. AAAAAA
- B. AKDHEN
- C. ADEHKN
- D. NKHEDA
- E. NHDKA

```
String s = "AKDHEN";
char[] a = s.toCharArray();
Arrays.sort(a);
for(char i : a)
    System.out.print( i );
```

<div>QUESTION 24</div> <div>What is output by the method call <code>whoot(2)</code> ?</div> <div>A. 1234 B. 4321 C. 2314 D. 2222 E. 3412</div>	<pre>public static void me(int[] data, int a){ int t; int len = data.length-1; for(int j = 0; j < a; j++){ t=data[len]; for(int i = len; i > 0; i--){ data[i] = data[i-1]; } data[0]=t; } } public void whoot(int x){ int[] m = {1, 2, 3, 4}; me(m,x); for(int i : m) System.out.print(i); }</pre>
<div>QUESTION 25</div> <div>What is output by the method call <code>whoot(8)</code> ?</div> <div>A. 1234 B. 4321 C. 2314 D. 8888 E. 3412</div>	
<div>QUESTION 26</div> <div>What does the code to the right do ?</div> <div>A. Replaces all of m's elements with x's elements</div> <div>B. Reverses all elements in the array</div> <div>C. Rotates the elements in the array to the right x places</div> <div>D. Rotates the elements in the array to the left x places</div> <div>E. The code the right does nothing</div>	
<div>QUESTION 27</div> <div>What will be the rightmost leaf when the following numbers are placed in a Binary Search Tree in the order shown ?</div> <div>13 55 6 34 8 2 18 78 12 5</div> <div>A. 13 B. 55 C. 78 D. 34 E. 5</div>	
<div>QUESTION 28</div> <div>What is output by the code to the right ?</div> <div>A. aPlwEa</div> <div>B. aPlwaa</div> <div>C. aaaaaa</div> <div>D. aPaaEa</div> <div>E. ePlwEe</div>	<pre>String s = "ePlwEe"; s.replaceAll("e","a"); System.out.print(s);</pre>
<div>QUESTION 29</div> <div>What is output by the code to the right ?</div> <div>A. 2</div> <div>B. 4</div> <div>C. 6</div> <div>D. 8</div> <div>E. 0</div>	<pre>String s = "Now is the time"; String[] t = s.split("[\\Wi]"); System.out.print(t.length);</pre>
<div>QUESTION 30</div> <div>What is output by the code to the right ?</div> <div>A. 12</div> <div>B. 123</div> <div>C. 1</div> <div>D. 2</div> <div>E. 3</div>	<pre>int[][]m={{1,2},{1,2,3},{1},{1,2,3}}; for(int a=0;a<m[2].length;a++) System.out.print(m[2][a]);</pre>

QUESTION 31	What is output by the line marked //1 in the code to the right? A. true B. false C. 1 D. 2 E. 3	<pre>Map<Integer,String> map; map = new TreeMap<Integer,String>(); map.put(1,"one"); map.put(2,"two"); map.put(3,"three"); map.put(4,"four"); map.remove(3); out.print(map.containsKey(2)); //1 out.print(map.entrySet().remove(2)); //2 out.print(map.keySet().size()); //3</pre>																
QUESTION 32	What is output by the line marked //2 in the code to the right? A. true B. false C. 1 D. 2 E. 3																	
QUESTION 33	What is output by the line marked //3 in the code to the right? A. true B. false C. 1 D. 2 E. 3																	
QUESTION 34	What is output by the code to the right ? A. 23 B. 21 C. 3 D. 2 E. 0	<pre>System.out.println(23 ^ 2 3);</pre>																
QUESTION 35																		
Which of the following best characterizes the best and worst case running times for the merge sort ?																		
<table><tr><td><best case></td><td><worst case></td><td><best case></td><td><worst case></td></tr><tr><td>A. $O(n^2)$</td><td>$O(n^2)$</td><td>D. $O(\log_2 n)$</td><td>$O(\log_2 n)$</td></tr><tr><td>B. $O(n \log_2 n)$</td><td>$O(n^2)$</td><td>E. $O(n \log_2 n)$</td><td>$O(n \log_2 n)$</td></tr><tr><td>C. $O(n \log_2 n)$</td><td>$O(n)$</td><td></td><td></td></tr></table>			<best case>	<worst case>	<best case>	<worst case>	A. $O(n^2)$	$O(n^2)$	D. $O(\log_2 n)$	$O(\log_2 n)$	B. $O(n \log_2 n)$	$O(n^2)$	E. $O(n \log_2 n)$	$O(n \log_2 n)$	C. $O(n \log_2 n)$	$O(n)$		
<best case>	<worst case>	<best case>	<worst case>															
A. $O(n^2)$	$O(n^2)$	D. $O(\log_2 n)$	$O(\log_2 n)$															
B. $O(n \log_2 n)$	$O(n^2)$	E. $O(n \log_2 n)$	$O(n \log_2 n)$															
C. $O(n \log_2 n)$	$O(n)$																	
QUESTION 36	For what values of a and b will the value of c be true? A. a=true, b=true B. a=true, b=false C. a=false, b=true D. a=false, b=false E. all of these	<pre>boolean a, b, c; c = a && (!b a)==!a && !b (a && b);</pre>																
QUESTION 37	What is output by the line marked //1 in the code to the right? A. one B. One C. Two D. two E. three	<pre>public class A{ private String m; public A(){m="one";} public A(String n){m = n;} public String toString(){ return m + "\n"; } } public class B extends A{ public B(String n){super(n);} } public class C extends A{ private String m; public C(String n){this.m="three";} } //////////////////////////////////// ////client code A x = new B("One"); out.println(x); //1 x=new B("Two"); out.println(x); //2 x=new C("Three"); out.println(x); //3 x=new A("Four"); out.println(x); //4</pre>																
QUESTION 38	What is output by the line marked //2 in the code to the right? A. one B. One C. Two D. two E. three																	
QUESTION 39	What is output by the line marked //3 in the code to the right? A. one B. One C. Three D. three E. Two																	
QUESTION 40	What is output by the line marked //4 in the code to the right? A. one B. One C. Four D. four E. two																	