

UIL COMPUTER SCIENCE WRITTEN TEST – 2026 INVITATIONAL A

Note: Correct responses are based on Java SE Development Kit 25 (JDK 25) from Oracle, Inc. All provided code segments are intended to be syntactically correct, unless otherwise stated (e.g., "error" is an answer choice) and any necessary Java SE 25 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 using: `import static java.lang.System.*;`

Question 1

Which of the following is the base 2 representation of 81_{10} ?

- A) 1100110000₂ B) 1101101101₂ C) 1101101000₂ D) 1100110001₂ E) 1101101010₂

Question 2

What is output by the code to the right?

- A) 4 B) 5 C) 10 D) 11 E) 12

```
int result = 2 + 3 * 4 - 6 / 3;
out.println(result);
```

Question 3

What is output by the code to the right?

- A) x = 5, y = 2.8 B) x = 5, y = 2.7

- C) x = 5, y = 2.75 D) x = %d, y = %.1f

- E) There is no output due to an error.

```
out.printf
    ("x = %d, y = %.1f\n", 5, 2.75);
```

Question 4

What is output by the code to the right?

- A) Java B) Roc

- C) Rocks D) Rock

- E) ava

```
String s = "Java Rocks";
int len = s.length();
String t = s.substring(5, len);
out.println(t);
```

Question 5

What is output by the code to the right?

- A) false B) true

```
boolean result = true || false && !false;
out.println(result);
```

Question 6

What is output by the code to the right?

- A) -3.7 B) 3.7

- C) 2.0 D) 2

```
double a = -3.7;
double b = 2.0;
double c = Math.abs(a);
out.println(Math.max(b, c));
```

Question 7

What is output by the code to the right?

- A) 10 B) 11

- C) 12 D) 9

- E) 13

```
int x = 4;
x = x + 2 * 3;
x = x - 1;
out.println(x);
```

Question 8

What is output by the code to the right?

- A) D

- B) C

- C) A

- D) B

- E) ABC

```
int score = 85;
if(score >= 90) {
    out.println("A");
} else if(score >= 80) {
    out.println("B");
} else {
    out.println("C");
}
```


Question 9

What is output by the code to the right?

- | | |
|--------------|------------|
| A) 0 1 2 3 | B) 1 2 3 4 |
| C) 0 1 2 3 4 | D) 0 1 2 |
| E) 1 2 3 | |

```
for(int i = 1; i <= 3; i++) {
    out.print(i + " ");
}
```

Question 10

Which of the following correctly creates an int array of length 4 and sets its first element to 10?

- | | |
|--|--|
| A) int[] a = new int[4];
a[1] = 10; | B) int[] a = new int[4];
a[0] = 10; |
| C) int[4] a = {10}; | D) int a = new int[4];
a[0] = 10; |
| E) int[] a = {10}; | |

Question 11

Which standard Scanner method could not read the value 129 as input from a file?

- A) nextLine() B) next() C) nextInt() D) nextDouble() E) nextByte()

Question 12

What is output by the code to the right?

- | | |
|-------|-------|
| A) 10 | B) 11 |
| C) 15 | D) 6 |
| E) 9 | |

```
int sum = 0;
for(int i = 1; i <= 4; i++) {
    sum += i;
}
out.println(sum);
```

Question 13

What is output by the code to the right?

- A) 0 B) 2 C) 3 D) 1 E) 11

```
int result = 3 + 4 * 2 > 10 ? 1 : 0;
out.println(result);
```

Question 14

Which of the following primitive data types can store the largest whole-number value?

- A) byte B) short C) int D) long E) char

Question 15

Which of the following correctly declares and creates an ArrayList that stores String objects?

- A) ArrayList list = new ArrayList<String>();
B) ArrayList<String> list = new ArrayList<String>();
C) ArrayList<String> list = new ArrayList<string>();
D) ArrayList<String> list = new ArrayList<int>();
E) None of the above.

Question 16

What is output by the code to the right?

- | | |
|---|--|
| A) 23 | |
| B) 13 | |
| C) 123 | |
| D) There is no output due to a compile error. | |
| E) There is no output due to a runtime error. | |

```
try {
    int i = 1;
    i = i / --i;
    out.print(1);
} catch (ArithmaticException e) {
    out.print(2);
} finally {
    out.print(3);
}
```


Question 17

What could replace <1*> in the code to the right so that it will compile and run without error.

- A) push
- B) offer
- C) add
- D) Both B and C.
- E) All of the above.

Question 18

Assuming <1*> is filled in correctly, which of the following could not be found in the output by the code to the right?

- A) 191
- B) 15
- C) 190
- D) 13
- E) More than one of the above.

Question 19

What is the big \mathcal{O} runtime of the code to the right

- A) $\mathcal{O}(N \log \log N)$
- B) $\mathcal{O}(N)$
- C) $\mathcal{O}(N^2)$
- D) $\mathcal{O}(\log \log N)$
- E) $\mathcal{O}(N^2 \log \log N)$

Question 20

Which of the lines in the code to the right first causes an error (compile- or run-time)?

- A) //1
- B) //2
- C) //4
- D) //3
- E) None of the above. All lines will be error-free.

Question 21

What is output if the following call is made to the function fun to the right? `fun(-7);`

- A) -7
- B) -212
- C) 0
- D) 212
- E) There is no output due to a runtime error.

Question 22

What is output if the following call is made to the function fun to the right? `fun(14);`

- A) -83
- B) -89
- C) -86
- D) -80
- E) There is no output due to a runtime error.

```
Queue<Integer> s;
s = new LinkedList<Integer>();
for(int y = 0; y < 100; y++) {
    int i = 13;
    i += (int)(Math.random() * 178);
    s.<1*>(i);
}
while(!s.isEmpty())
    out.println(s.poll());
```

```
int i = 1, j = 0;
j *= 8.9; //1
i /= j++; //2
i += ++i; //3
j += (i -= 1); //4
```

```
int fun(int n) {
    int i = 7;
    if(n < 0)
        return -212;
    if(n%2 == 1)
        i = 10;
    return i + fun(n - 1);
}
```

