You can preview this quiz, but if this were a real attempt, you would be blocked because:

This quiz is not currently available

Question **1**

Not yet answered

Marked out of 1.00

Given the following class A, an instance is created with Object o = new A(); and then the method o.toString() is called. What String does this call return?

```
public class A {
    private int a;
    private int b;
    public A(int a, int b) {
        this.a = a;
        this.b = b;
    }
    public A(int a) {
        this(a, 1);
    }
    public A() {
        this(1);
    }
    public String toString() {
        return "" + a + "," + b;
    }
}
```

Select one:

- a. Whatever toString() of the Object class returns.
- b. 0,1
- c. 0,0
- d. 1,1

Clear my choice

Question **2**

Not yet answered

Marked out of 1.00

When traversing a linked list, how do we know that we have reached the last node?

Select one:

- a. When the node following the current one is null.
- b. When the first node in the list is also the last one.
- c. When the current node is null.
- d. When the information in the node following the current one is null.

Clear my choice

Question **3**

Not yet answered

Marked out of 1.00

Regarding a Deque, select the INCORRECT option:

Select one:

- a. It has methods for inserting and extracting elements from both sides.
- b. It can be used for implementing a queue.
- c. It can be used for implementing a stack.
- d. It is a very efficient data structure to search for elements stored in it.

Clear my choice

Question **4**

Not yet answered

Marked out of 1.00

You program a method that calculates the logarithm of a number. Indicate the set of values that could be used to test the method taking into account both equivalence classes and boundary values.

Select one:

- a. -23.7, 0, 0.4, 46.2
- b. -5.6, -3.2, 0.7, 1.4
- c. 0, 1, 2, 3, 4
- d. -100, 100

Clear my choice

Question **5**

Not yet answered

Marked out of 1.00

If we insert the following sequence of elements 6,8,3,1,4,7,9 one by one into a binary search tree, which of the following sequences represents the in-order traversal of the tree.

Select one:

- a. 1,4,3,9,7,6,8
- b. 1,3,4,6,7,8,9
- c. 6,3,1,4,8,7,9
- d. 1,4,3,7,9,8,6

Clear my choice

Question **6**

Not yet answered

Marked out of 1.00

Select the correct declaration for a class A that implements interface I and that also inherits from class B:

Select one:

- a. public interface I implements A extends B
- b. public class B extends A implements I
- c. public class A extends B implements I
- d. public class B implements I extends A

Clear my choice

Question **7**

Not yet answered

Marked out of 1.00

You have programmed a class which contais two methods: main() and a(). a() has several lines of code and is called on the first line of the main() method. You add a breakpoint in the first line of a() and then you call the Eclipse debugger; this is your only breakpoint in the code. Which option should you use so that a() is completely executed and the debugger returns to the first line of the main() method?

Select one:

- a. Step return
- b. Step over
- c. Step into
- d. Terminate

Clear my choice

Question **8**

Not yet answered

Marked out of 1.00

In object oriented programming, every object:

Select one:

- a. Implements a class
- b. Inherits from a class
- c. Is an interface
- d. Is an instance of a class

Clear my choice

Question **9**

Not yet answered

Marked out of 1.00

A dictionary is a data structure in which each datum is associated to a key. The insertion operation receives both the datum and the key. The retrieval operation receives the key and returns the associated datum. Which of the following data structures is the most adequate for implementing a dictionary?

Select one:

- a. A max-heap
- b. A linked list
- c. A priority queue
- d. A binary search tree

Clear my choice

Question **10**

Not yet answered

Marked out of 1.00

Given the following class declarations, which of the following assignments is NOT correct because the data types are incompatible?

```
public class Student extends Person {...}
public class Professor extends Person {...}
public class Intern extends Student {...}
```

Select one:

- a. Student s = new Intern();
- b. Person p = new Intern();
- c. Object o = new Professor();
- d. Professor p = new Person();

Clear my choice

Question **11**

Not yet answered

Marked out of 1.00

What is true for the following method m(), implemented in the LBNode class of a binary tree?

```
public class LBNode {
    private E info;
    private LBNode left;
    private LBNode right;
    (...)
    public int m() {
        return 1 + left.m() + right.m();
    }
}
```

Select one:

- a. It returns the number of nodes in the tree.
- b. It always throws a NullPointerException exception.
- c. It traverses the tree in preorder
- d. It returns the height of the tree.

Clear my choice

Question **12**

Not yet answered

Marked out of 1.00

How many swaps are needed to sort the following array 5,3,4,1,2 from smallest to largest using Heap Sort?

Select one:

- a. 7
- b. 9
- c. 6
- d. 8

Clear my choice

Question **13**

Not yet answered

Marked out of 1.00

Considering a LinkedQueue that uses generics and the implementation of the method dequeue() as shown below, with head a reference to the next node to be extracted in the queue, and last the reference to the last node that was inserted, which of the following statements is correct?

```
public E dequeue(){
    E info;
    if (!isEmpty()) {
        info = head.getInfo();
        head = head.getNext();
        size--;
    } else {
        info = null;
    }
    return info;
}
```

Select one:

- a. The method is incorrect because it does not implement correctly the case of dequeuing the last element of the queue.
- b. The method is correct
- c. The method is incorrect because it dequeues on the wrong side of the queue
- d. The method is incorrect because it does implement correctly the case of an empty queue.

Clear my choice

Question **14**

Not yet answered

Marked out of 1.00

What does the call to the following method return for n=4?

```
public int m(int n){
    if (n<=2){
        return 3;
    }else {
        return 2*(m(n-1)+ m(n-2));
    }
}
```

Select one:

- a. 4
- b. 3
- c. 30
- d. 24

Clear my choice

Question **15**

Not yet answered

Marked out of 1.00

Class B inherits from class A. If both classes have their own void m() method, how can the m() method in class B call the m() method in class A?

Select one:

- a. m()
- b. super.m()
- c. this.m()
- d. It cannot be called because it is hidden.

Clear my choice

Question **16**

Not yet answered

Marked out of 1.00

If a method is called passing it a reference to an object as parameter, and the value of an attribute of the object is changed inside the method:

Select one:

- a. The change will also be visible from the code outside the method, unless the attribute whose value is changed is of a primitive type, in which case it will not be visible from the code outside the method.
- b. The change will also be visible from the code outside the method, unless the object being passed is of types Integer, Double, Float, Long, Short, Byte, Character or Boolean.
- c. The change is also visible from the code that called the method.
- d. The change will not be visible from the code outside the method.

Clear my choice

Question **17**

Not yet answered

Marked out of 1.00

What type of recursion is in the following method?

```
public int m(int a, int b){
    if (a < b){
        return a;
    }
    else{
        m(a - 1, m(a, b - 1));
    }
}
```

Select one:

- a. Non-linear, cascading recursion
- b. Linear, tail recursion
- c. Linear, non-tail recursion
- d. Non-linear, nested recursion

Clear my choice

Question **18**

Not yet answered

Marked out of 1.00

Given the following code and the test class, what line coverage is achieved?

```
public class C {
        public static int m(double a){
           if (a>1){
                        return 1;
                } else if (a<-1){
                        return -1;
                } else{
                        return 0;
                }
        }
}

public class CTest {
        @Test
        public void test() {
                assertEquals(C.m(35.4), 1);
                assertEquals(C.m(-13.5), -1);
                assertEquals(C.m(0.7), 0);
        }
}
```

Select one:

- a. 50%
- b. 100%
- c. 66.6%
- d. 75%

Clear my choice

Question **19**

Not yet answered

Marked out of 1.00

If we have three methods m1, m2, and m3, that provide the same result, but have the following complexities: m1 is O(n), m2 is O(n*log n), m3 is O(log n), we can say that the most efficient is method is

Select one:

- a. m1
- b. they are all equally efficient
- c. m3
- d. m2

Clear my choice

Question **20**

Not yet answered

Marked out of 1.00

Choose the INCORRECT option:

Select one:

- a. An interface declares methods without implementing them.
- b. All the methods in an abstract class must be abstract
- c. An abstract class may have constructors.
- d. Neither abstract classes nor interfaces can be instantiated.

Clear my choice

◄ Problems (2 problems, 7 parts, 80 minutes) (7 points)

Jump to...

Problems (3 problems, 7 parts, 150 minutes) (7 points) (hidden) ►