

Questão 1

A programmer has an algorithm that requires a `java.util.List` that provides an efficient implementation of `add(0,object)`, but does NOT need to support quick random access. What supports these requirements?

- A. `java.util.Queue`
- B. `java.util.ArrayList`
- C. `java.util.LinearList`
- D. `java.util.LinkedList`

Questão 2

Given:

1. `public class Drink implements Comparable {`
2. `public String name;`
3. `public int compareTo(Object o) {`
4. `return 0;`
5. `}`
6. `}`

and:

20. `Drink one = new Drink();`
21. `Drink two = new Drink();`
22. `one.name= "Coffee";`
23. `two.name= "Tea";`
23. `TreeSet set = new TreeSet();`
24. `set.add(one);`
25. `set.add(two);`

A programmer iterates over the `TreeSet` and prints the name of each `Drink` object.

What is the result?

- A. Tea
- B. Coffee
- C. Coffee
Tea
- D. Compilation fails.
- E. The code runs with no output.
- F. An exception is thrown at runtime.

Questão 3

Given:

```
int[] myArray=newint[] {1, 2,3,4, 5};
```

What allows you to create a list from this array?

- A. List myList = myArray.asList();
- B. List myList = Arrays.asList(myArray);
- C. List myList = new ArrayList(myArray);
- D. List myList = Collections.fromArray(myArray);

Questão 4

Given:

```
1. import java.util.*;  
2.  
3. public class LetterASort {  
4. public static void main(String[] args) {  
5. ArrayList<String> strings = new ArrayList<String>();  
6. strings.add('aAaA");  
7. strings.add("AaA");  
8. strings.add('aAa");  
9. strings.add("AAaa");  
10. Collections.sort(strings);  
11. for (String s: strings) { System.out.print(s + " "); }  
12. }  
13. }
```

What is the result?

- A. Compilation fails.
- B. aAaA aAa AAaa AaA
- C. AAaa AaA aAa aAaA
- D. AaA AAaa aAaA aAa
- E. aAa AaA aAaA AAaa
- F. An exception is thrown at runtime.

Questão 5

Given:

1. public class TestOne implements Runnable {
2. public static void main (String[] args) throws Exception {
3. Thread t = new Thread(new TestOne());
4. t.start();
5. System.out.print("Started");
6. t.join();
7. System.out.print("Complete");
8. }
9. public void run() {
10. for (int i = 0; i < 4; i++) {
11. System.out.print(i);
12. }
13. }
14. }

What can be a result?

- A. Compilation fails.
- B. An exception is thrown at runtime.
- C. The code executes and prints "StartedComplete".
- D. The code executes and prints "StartedComplete0123".
- E. The code executes and prints "Started0123Complete".

Questão 6

Given:

```
12. import java.util.*;  
13. public class Explorer1 {  
14. public static void main(String[] args) {  
15. TreeSet<Integer> s = new TreeSet<Integer>();  
16. TreeSet<Integer> subs = new TreeSet<Integer>();  
17. for(int i = 606; i < 613; i++) 18. if(i%2 == 0) s.add(i);  
19. subs = (TreeSet)s.subSet(608, true, 611, true);  
20. s.add(609);  
21. System.out.println(s + " " + subs);  
22. }  
23. }
```

What is the result?

- A. Compilation fails.
- B. An exception is thrown at runtime.
- C. [608, 609, 610, 612] [608, 610]
- D. [608, 609, 610, 612] [608, 609, 610]
- E. [606, 608, 609, 610, 612] [608, 610]
- F. [606, 608, 609, 610, 612] [608, 609, 610]

Questão 7

Given:

```
3. import java.util.*;  
4. public class Mapit {  
5.     public static void main(String[] args) {  
6.         Set<Integer> set = new HashSet<Integer>();  
7.         Integer i1 = 45;  
8.         Integer i2 = 46;  
9.         set.add(i1);  
10.        set.add(i1);  
11.        set.add(i2); System.out.print(set.size() + " ");  
12.        set.remove(i1); System.out.print(set.size() + " ");  
13.        i2 = 47;  
14.        set.remove(i2); System.out.print(set.size() + " ");  
15.    }  
16. }
```

What is the result?

- A. 2 1 0
- B. 2 1 1
- C. 3 2 1
- D. 3 2 2
- E. Compilation fails.
- F. An exception is thrown at runtime.

Questão 8

Given that the elements of a PriorityQueue are ordered according to natural ordering, and:

```
2. import java.util.*;
3. public class GetInLine {
4.     public static void main(String[] args) {
5.         PriorityQueue<String> pq = new PriorityQueue<String>();
6.         pq.add("banana");
7.         pq.add("pear");
8.         pq.add("apple");
9.         System.out.println(pq.poll() + " " + pq.peek());
10.    }
11. }
```

What is the result?

- A. apple pear
- B. banana pear
- C. apple apple
- D. apple banana
- E. banana banana

Questão 9

Given:

```
1. public class Score implements Comparable<Score> {
2.     private int wins, losses;
3.     public Score(int w, int l) { wins = w; losses = l; }
4.     public int getWins() { return wins; }
5.     public int getLosses() { return losses; }
6.     public String toString() {
7.         return "<" + wins + "," + losses + ">";
8.     }
9.     // insert code here
10. }
```

Which method will complete this class?

- A. public int compareTo(Object o){/*more code here*/}
- B. public int compareTo(Score other){/*more code here*/}
- C. public int compare(Score s1,Score s2){/*more code here*/}
- D. public int compare(Object o1,Object o2){/*more code here*/}

Questão 10

Given that the current directory is empty, and that the user has read and write permissions, and the following:

```
11. import java.io.*;
12. public class DOS {
13.     public static void main(String[] args) {
14.         File dir = new File("dir");
15.         dir.mkdir();
16.         File fl = new File(dir, "fl.txt");
17.         try {
18.             fl.createNewFile();
19.         } catch (IOException e) { ; }
20.         File newDir = new File("newDir");
21.         dir.renameTo(newDir);
22.     }
23. }
```

Which statement is true?

- A. Compilation fails.
- B. The file system has a new empty directory named `dir`.
- C. The file system has a new empty directory named `newDir`.
- D. The file system has a directory named `dir`, containing a file `fl.txt`.
- E. The file system has a directory named `newDir`, containing a file `fl.txt`.

Questão 11

Given:

```
3. public class Tour {
4.     public static void main(String[] args) {
5.         Cathedral c = new Cathedral();
6.         // insert code here
7.         s.go();
8.     }
9. }
10. class Cathedral {
11.     class Sanctum {
12.         void go() { System.out.println("spooky"); }
13.     }
14. }
```

Which, inserted independently at line 6, compile and produce the output "spooky"? (Choose all that apply.)

- A. `Sanctum s = c.new Sanctum();`
- B. `c.Sanctum s = c.new Sanctum();`
- C. `c.Sanctum s = Cathedral.new Sanctum();`
- D. `Cathedral.Sanctum s = c.new Sanctum();`
- E. `Cathedral.Sanctum s = Cathedral.new Sanctum();`