Question - 1

Definition

SCORE: **25 points**

In general, an interface includes_________

● methods and constants

○ classes and methods

○ abstract methods

○ constants and variables

Question - 2

Try-catch-finally

SCORE: **25 points**

```
public class Q2 {
    public static void main(String[] args) {
System.out.println("The final value: " + test());
}

    public static int test() {
        int i = 10;
        try {
            System.out.println("In the try block:
" + i++);
            i = i / 0;
            ++i;
        }
        catch (Exception e){
            System.out.println("In the catch
block: " + i);
            return ++i;
        }
        finally {
            System.out.println("In the finally
block: " + i);
            return i++;
        }

    }
}
```

○

In the try block: 10 In the catch block: 11 In the finally block: 12 The final value: 13

●

In the try block: 10 In the catch block: 11 In the finally block: 12 The final value: 12

○

In the try block: 10 In the catch block: 11 In the finally block: 11 The final value: 12

○

In the try block: 11 In the catch block: 12 In the finally block: 12 The final value: 13

Question - 3

SCORE: 25 points

List

```
public class main {
    public static void main(String[] args) {
        List<Integer> list = new ArrayList<>();
        list.add(1);
        list.add(4);
        list.add(3);
        list.add(9);
        list.add(6);
        list.remove(2);
        list.remove(6);
        list.add(50/3);
        list.add(3, 15);
        System.out.print("[" + list.get(0));
        for ( int i = 1; i < list.size(); i++ ) {
            if (Judge(list.get(i))) {
                System.out.print("," +
list.get(i));
            }
        }
        System.out.println("]");
    }
    private static boolean Judge (int n) {
        return n%2 == 0 || n%3 == 0;
    }

}
```

○ [1,4,9,15,6,16]

○ [1,3,9,15,16]

○ [1,4,9,15,16]

● throw Exception

○ Compile Error

Question - 4

SCORE: 25 points

HashMap

What happens if we put a key object in a HashMap which exists?

○ It throws an exception as the key already exists in the map

○ The new object is discarded

○ he old object is removed from the map

● The new object replaces the older object

Question - 5

Compare

SCORE: **25 points**

What’s the values of the following expressions:

"zebra".compareTo("emu");
(new Integer(5)).compareTo(new Integer(8));
"ZURICH".compareTo("cairo");
"pit viper".compareTo("pit");

● a postive integer, a negative integer, a negative integer, a postive integer

○ a negative integer, a postive integer, a negative integer, a postive integer

○ a postive integer, a negative integer, a postive integer, a negative integer

○ a negative integer, a postive integer, a postive integer, a negative integer

Question - 6

Abstract

SCORE: **25 points**

```
public class Q6 {
    abstract static class Car {
        public void WhatsIt() {
            System.out.println("This is a car.");
        }
    }
    static class Ferrari extends Car {
        @Override
        public void WhatsIt() {
            System.out.println("This is a
Ferrari.");
        }
    }
    static class Porsche extends Car {
        @Override
        public void WhatsIt() {
            System.out.println("This is a
Porsche.");
        }
    }
    public static void main(String[] args) {
        Car c1 = new Ferrari();
        Porsche c2 = new Porsche();
        Car c3 = (Car)c2;
        c1.WhatsIt();
        c2.WhatsIt();
        c3.WhatsIt();
    }
}
```

○ This is a car. This is a Porsche. This is a Porsche.

○ This is a car. This is a Porsche. This is a car.

● This is a Ferrari. This is a Porsche. This is a Porsche.

○ This is a Ferrari. This is a Porsche. This is a car.

Question - 7

Sort

SCORE: 50 points

.NET A/B Testing

Given 2 lists of Integers as input to the function, return a Sorted List(Descending order) containing integers included in both input lists.

Eg:
input 1 : [2,3,5,7,27,1,6];
input 2 : [8,55,77,5,9,6,1];

answer: [6,5,1]

Explanation:
- the elements 1,5,6 are present in both input lists
- the returned values need to be in descending order thus,6(highest) to 1(lowest).

Assumptions:
 no element in the input arrays would be repeated.

If you want to use your custom case, please input two lines of numbers split by space
ex:
1 2 3 4 5 6
1 2 3 4