

CORRECTION OF FINAL EXAM A

Exercice01: write T for True or F for false

1. The call to the parent class constructor is done using the keyword super() .	True
2. If we have public class B extends A, we can write B b = new A() .	False
3. The word abstract for methods in class is optional.	False
4. We can create an object from abstract class	False
5. Constructors are not inherited by child classes.	True
6. Every private attribute must have a setter and a getter method.	True
7. In Java, multiple inheritance (one class having several parent classes) can be achieved.	False
8. To prevent or disallow inheritance, the final keyword must be used.	True
9. A derived class cannot define methods other than those of its mother class.	False
10. An abstract class has at least one abstract method.	False

Exercice 2 (05 points) (20 min)

Quelle sera la sortie des deux codes suivants ?

Code 1	0.75	Code2
I am at the High School I am in the science core I am in 3 year 0.75 x 3		I speak my language I speak my language and I speak the French language 1.25
	0.75	I speak the English language
2.25		2.75

CORRECTION OF FINAL EXAM B

1. In Java, multiple inheritance (one class having several parent classes) can be achieved.	False
2. To prevent or disallow inheritance, the final keyword must be used.	True
3. Constructors are not inherited by child classes.	True
4. Every private attribute must have a setter and a getter method.	True
5. A derived class cannot define methods other than those of its mother class.	False
6. An abstract class has at least one abstract method.	False
7. The call to the parent class constructor is done using the keyword super() .	True
8. If we have public class B extends A, we can write B b = new A() .	False
9. The word abstract for methods in class is optional.	False
10. We can create an object from abstract class	False

Exercise 2 (05 points)

Code 1	Code2
I am at the High School I am in the economic core I am in 3 year 0.75 x 3	0.75 I speak my language I speak my language and I speak the Spanish language 1.25 0.75 I speak the English language

2.25

2.75

Client class:

```
public class Client {  
  
    public String FullName;  
    public int PhoneNumber;  
    public String Address;  
  
    // Default constructor  
    public Client() {  
    }  
  
    public String getFullName() { return FullName; }  
    public void setFullName(String fullName) { FullName = fullName; }  
    public int getPhoneNumber() { return PhoneNumber; }  
    public void setPhoneNumber(int phoneNumber) { PhoneNumber = phoneNumber; }  
}
```

1.25

0.25

0.25 X 4

```
public class Delivered_Product {  
    public String Designation;  
    public Client Buyer= new Client();  
  
    public Delivered_Product() {  
    }  
  
    public Delivered_Product(String designation, Client buyer)  
    {  
        this.Designation = designation;  
        this.Buyer = buyer;  
    }  
  
    public String toString() {  
        return "Product: " + Designation +  
            " | Buyer: " + Buyer.FullName +  
            " | Phone: " + Buyer.PhoneNumber +  
            " | Delivery Address: " + Buyer.Address;  
    }  
  
    public void Designation_Address() {  
        System.out.println("Designation: " + Designation);  
        System.out.println("Destination: " + Buyer.Address);  
    }  
}
```

0.25

2.75

0.25

0.25

0.25

0.25

0.25 X 4

0.25

0.25

```
public class Electronic_Product extends Delivered_Product
```

```
    private String Reference;  
    private String Brand;  
    private double Weight;  
    private String Transporter;  
    public static int counter = 1;
```

0.25

0.25

3

```
public Electronic_Product(){  
    super();  
    this.Reference = "ELEC-" + counter++;  
}
```

0.25

0.25

0.25

```
public Electronic_Product(String designation, Client buyer, String brand,  
double weight, String transporter) {  
    super(designation, buyer);  
    this.Reference = "ELEC-" + counter++;  
    this.Brand = brand;  
    this.Weight = weight;  
    this.Transporter = transporter;  
}
```

0.25

0.25

0.25

0.25

```
public String toString() {  
    return super.toString() +  
        " | Ref: " + Reference +  
        " | Brand: " + Brand +  
        " | Weight: " + Weight + "kg" +  
        " | Transporter: " + Transporter;  
}
```

0.25

0.25

```
public double calculate_Delivery_Cost() {  
    // Base cost is 200 DA, plus 500 DA per kilogram  
    return 200 + (500 * Weight);  
}
```

0.25

```
import java.util.Scanner;
```

3

```
public class Test {  
    public static void main(String[] args) {  
        Scanner Sc = new Scanner(System.in);
```

```
        Electronic_Product[] products = new Electronic_Product[3];
```

0.25

```
        for (int i = 0; i < products.length; i++) {
```

```
            // create Client object first  
            Client currentClient = new Client();
```

0.25

```
            System.out.print("Enter Buyer Full Name: ");  
            currentClient.FullName = Sc.nextLine();
```

0.25

```
            System.out.print("Enter Buyer Phone Number: ");  
            currentClient.PhoneNumber = Sc.nextLine();
```

0.25

```
System.out.print("Enter Delivery Address: ");  
currentClient.Address = Sc.nextLine();
```

0.25

```
System.out.print("Enter Product Designation: ");  
String design = Sc.nextLine();
```

0.25

```
System.out.print("Enter Brand: ");  
String brand = Sc.nextLine();
```

0.25

```
System.out.print("Enter Transporter (e.g., Yalidine): ");  
String transporter = Sc.nextLine();
```

0.25

```
System.out.print("Enter Weight in kg: ");  
double weight = Sc.nextDouble();
```

0.25

```
    // Step C: Create the Electronic_Product object and put it in the array  
    products[i] = new Electronic_Product(design, currentClient, brand,  
weight, transporter);  
}
```

0.25

```
    for (int i = 0; i < products.length; i++) {
```

```
        // Displaying the object using toString()  
        System.out.println(products[i]);
```

0.25

```
        // Calculating and displaying the cost  
        double cost = products[i].calculate_Delivery_Cost();  
        System.out.println("Total Delivery Cost: " + cost + " DA");
```

0.25

```
    }
```

```
}
```

```
}
```