

## **Systems Programming**



## First miterm exam - Groups 95 and 196 Part 1 - Theory (3 points) - 20 minutes

Each correct answer adds 0.3 points and each incorrect answer substracts 0.1 points

Q1	Which of the following commands should we use in the console/terminal to compile a Java source file that contains the class Person?
1)	javac Person.java
2)	java Person
3)	java Person.java
4)	javac Person.class

Q2	Which of the following sentences is correct?
1)	The name of the constructor must be the same as the name of the class.
2)	In Java we cannot have as many constructors as we want.
3)	The constructor of a class can be overridden in a derived class.
4)	When declaring a constructor we need to indicate void as the result type.

```
Given classes U and E, what is printed on the screen when class E is executed?
             public class U
             protected static int c = 0;
             public class E extends U{
             public E()
Q3
             c = 1;
               public static void main(String[] args){
             U a1 = new U();
             E b1 = new E();
             System.out.print(U.c + " - ");
             System.out.print(E.c);
             1 - 1
2)
             0 - 1
             The program contains a compilation error that prevents its execution.
             0 - 0
```

	Given the following code, which of the following statements is correct?
Q4	public interface D { public void print(); }
	public class P implements D
	{ private String name; }
1)	Class P does not compile, but it would if it were declared as an abstract class.
2)	The following assignment is correct: P p = new D();
3)	The method print() should be declared as abstract in D.
4)	As P implements D, it cannot override the method print().

```
Given classes A and P, what does it happen?
            public class P
            public class A extends P
Q5
            int N;
            public A (int N)
            this.N = N;
            super();
            A compilation error occurs because the super(); statement is in an incorrect position in the
1)
2)
            The code does not produce compilation errors.
            A compilation error occurs because the parameter that the constructor receives has the same
            name as an attribute of class A.
3)
            A compilation error occurs because with the super(); sentence the program tries to access the
            constructor of P, which has not been explicitly defined.
4)
```

	Given the following code, with each class in a separate file: which of the following
	assignments IS NOT CORRECT because of incompatible data types?
Q6	
	public class F extends D {}
	public class B extends D {}
	public class U extends F {}
1)	B b = new D()
2)	D d = new U()
3)	Object o = new B()
4)	F f = new U()

Q7	Regarding white box testing, which of the following statements is correct?
1)	It tests the structure of the code but not its functionality.
2)	It is performed directly by the client.
3)	It is performed manually and serves to measure the coverage of the code.
4)	It ensures the proper execution of each line of the program.

Q8	You implement a method that serves to add a 50% discount on the public transport for both underage and retired persons. This method receives the age of the person as a parameter. Assuming that the legal age is 18, and that people retire at 65 and live a maximum of 120 years, select the set of values that would allow to test all the equivalence classes for this method.
1)	-4, 10, 27, 84, 178
2)	0, 18, 65, 120
3)	0, 10, 30, 50, 70, 120
4)	-10, 5, 15, 75, 100

	What does the following method return for n=3?
Q9	
	public int result (int n){
	if (n
1)	11
2)	3
3)	8
4)	The code is incorrect and the recursion never ends.

	Given the following code, what type of recursion is used?
Q10	
	public double s(int n) {
	if (n
1)	Cascade recursion
2)	Linear non-tail recursion
3)	Mutual recursion
4)	Nexted recursion

PREGUNTA	SOLUCIÓN
Q1	1
Q2	1
Q3	1
Q4	1
Q5	1
Q6	1
Q7	1
Q8	1
Q9	1

Q10	1	