Nome Aluno: Número: Curso: Data:

Linguagens de Programação II

Theoretical Part: 30% of grade
Duration: 20 minutes
Professor: Rui Moreira

GROUP I: state if the following statements are True (T) or False (F):

NB: each correct answer gives you 1 value and each wrong answer takes you 0,5.

1. Java is a interpreted language ..... [ ]
2. The *garbage collector thread* is responsible for counting the number of references each object has ..... [ ]
3. The JVM has a module that checks both the format and execution restrictions of the *bytecode* ..... [ ]
4. The JVM is independent of the operating system where it executes ..... [ ]
5. All Java classes inherit the structure and functionality of the *Object* class ..... [ ]
6. To be able to use the *java.lang* classes we first need to import this *package* ..... [ ]
7. Each Java source file may have several public classes ..... [ ]
8. The *java* interpreter may only execute classes that implement the *main* method ..... [ ]
9. A Java source file may contain several non public class definitions ..... [ ]
10. The size of an *int* variable is the same of a *float* variable ..... [ ]
11. The *switch* expression tests a *boolean* expression against a set of *case* values ..... [ ]

GROUP II: for each set of statements choose the most correct one:

NB: each correct answer gives you 1 value and each wrong answer takes you 0,25.

```
[1]  // Pay attention to the following code. For each question suppose we
[2]  // correct all mistakes until the previous question.
[3]  public class Test {
[4]    public static void main(String[] param) {
[5]      A a1 = new A(), a2 = new A(5, "18");
[6]      System.out.println("Test – main(): "+a1.p);
[7]      System.out.println("Test – main(): "+a2.p);
[8]      System.out.println("Test – main(): "+a1.s);
[9]      if (a1.p>2 || a2.p<10) { a2.foo(5); } else { a2.foo(18); }
[10]   }
[11] }
[12] class A {
[13]   public int p=1;
[14]   private String s;
[15]   public X(int x, String y){ p=x; s=y; }
[16]   public X(){}
[17]   public void foo(int i) { System.out.println("X – foo(): "+i); }
[18] }
```

1. With respect to line four [4]:
   a) It has a compile error because the main method must have a parameter called *args* ..... [ ]
   b) It has a compile error because the main parameter should be *String args[]* ..... [ ]
   c) It has a compile error because the array must have a specific size ..... [ ]
   d) It has no errors ..... [ ]
2. The code presented earlier:
   a) Must be saved in a file named *TestApp.java* ..... [ ]
   b) Must be saved in a file named *Test.java* ..... [ ]
   c) Must be saved in a file named *A.java* ..... [ ]
   d) None of the above ..... [ ]
   e)
3. With respect to line five [5]:
   a) It is not possible to create an object using the default constructor of class A ..... [ ]
   b) It presents an error creating the object referenced by the variable *a2* ..... [ ]
   c) It is not possible to create 2 objects of the same class in the same line ..... [ ]
   d) It compiles with no errors ..... [ ]
4. With respect to line six [6]:
   a) It prints: `Test – main(): a1.p` ..... [ ]
   b) It prints: `Test – main(): 1` ..... [ ]
   c) It prints: `1` ..... [ ]
   d) None of the above answers is correct ..... [ ]
5. With respect to line seven [7]:
   a) It prints: `Test – main(): a2.p` ..... [ ]
   b) It prints: `Test – main(): 18` ..... [ ]
   c) It prints: `18` ..... [ ]
   d) None of the above answers is correct ..... [ ]
6. With respect to line eight [8]:
   a) It has a *compile error* ..... [ ]
   b) It prints: `Test – main(): null` ..... [ ]
   c) It prints: `null` ..... [ ]
   d) It raises an exception ..... [ ]
7. With respect to line eight [8]:
   a) It prints: `Test – main(): a2.s` ..... [ ]
   b) It prints: `Test – main(): null` ..... [ ]
   c) It prints: `null` ..... [ ]
   d) It raises an exception ..... [ ]
8. With respect to line nine [9]:
   a) It prints: `X – foo(): i` ..... [ ]
   b) It prints: `X – foo(): 5` ..... [ ]
   c) It prints: `X – foo(): 18` ..... [ ]
   d) None of the above ..... [ ]
9. Class constructors are used for:
   a) Releasing the memory used by objects which are no longer referenced ..... [ ]
   b) Initialize member variables (class fields) of the given class ..... [ ]
   c) Execute and initialize the JVM ..... [ ]
   d) Load the necessary classes for the execution of the program ..... [ ]