

Question **1**

Correct

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The final modifier applied to the header of the following method:

```
public void method(final int[] x, int y){...}
```

Select one:

- ☐ a. Indicates that variable y cannot take any of the values contained in the array received as parameter.
- ☐ b. Indicates that this method cannot be overridden in subclasses.
- ☒ c. Indicates that the values in the array received as parameter cannot be modified inside this method. ✓
- ☐ d. Indicates that the values in the array received as parameter cannot be modified nowhere in the program.

Question **2**

Correct

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Which of the following sentences about constructors is correct?

Select one:

- ☒ a. Constructors can be overloaded but cannot be overridden. ✓
- ☐ b. All the classes have two constructors by default, one that does not receive any parameters, and another one that initializes all the attributes defined in the class
- ☐ c. If we want to call the constructor of the superclass we need to add the super(...) statement in the last line of the constructor of the subclass.
- ☐ d. Constructors can have a return type different from void.

Question **3**

Correct

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Given the following code and the test class, what branch coverage is achieved?

```
public class C {
    public static int m(int a){
        if (a>0){
            return 1;
        } else if (a<0){
            return -1;
        } else{
            return 0;
        }
    }
}

public class CTest {
    @Test
    public void test() {
        assertEquals(C.m(2), 1);
        assertEquals(C.m(-7), -1);
        assertEquals(C.m(0), 0);
    }
}
```

Select one:

- ☐ a. 66.6%
- ☐ b. 50%
- ☒ c. 100% ✓
- ☐ d. 75%

Question 4

Correct

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Select the set of values that can be used as input for the black-box testing of a method that calculates the factorial of a number.

Select one:

- ☐ a. 22, 0, 15
- ☐ b. 5, -3, 1, -127, 48
- ☐ c. 1, 12, 7, -100, 100
- ☒ d. 47, 1, -30, 0



Question 5

Correct

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Given classes A and B (both in different files), what is printed on the screen when class B is executed?

```
public class A {  
    private static int c = 0;  
}  
  
public class B extends A{  
    private int d = 1;  
    public B() {  
        c++;  
    }  
  
    public static void main(String[] args){  
        B e1 = new B();  
        B e2 = new B();  
        System.out.print(B.c + "-" + e2.d);  
    }  
}
```

Select one:

- ☐ a. 0-2
- ☐ b. 0-1
- ☐ c. 2-1
- ☒ d. The program contains a compilation error that prevents its execution.



Question 6

Correct

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The following code:

```
public class C{  
    public static void main(String[] args) {  
        m();  
    }  
    private void m() {  
    }  
}
```

Select one:

- ☐ a. is incorrect because m() cannot be accessed from the main() method, since m() is a private method.
- ☒ b. is incorrect because a non-static method cannot be directly called from a static method.
- ☐ c. is incorrect because m() must be called using C.m().
- ☐ d. is correct.



Question **7**

Correct

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Given the class Parent and the class Child and (subclass of Parent) and the following code:

```
Parent p = new Parent();  
Child c = (Child) p;
```

Select one:

- ☐ a. A NullPointerException will be thrown.
- ☒ b. A ClassCastException will be thrown. 
- ☐ c. A NumberFormatException will be thrown.
- ☐ d. The code is correct. No exceptions will be thrown.

Question **8**

Correct


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You are using the Eclipse debugger and you are stopped at the only breakpoint you have defined. This breakpoint is in a line of code where you call another method, m(). You want to execute the current line but without stopping inside the code of m(). Which option should you use?

Select one:

- ☐ a. Resume
- ☒ b. Step over 
- ☐ c. Step return
- ☐ d. Step into

Question **9**

Correct


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Which of the following sentences about the use of the reserved word this is correct?

Select one:

- ☐ a. this.a(); calls the attribute a, which is located inside the same class
- ☐ b. return this.this; returns the object on which the method where this statement is found was called.
- ☒ c. this(1,0); calls a constructor located in the same class that expects two parameters of integer type. 
- ☐ d. this.m; calls the method m(), which is located inside the same class

Question **10**

Correct

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Given the following code, with each class in a separate file: which of the following assignments IS NOT CORRECT?

```
public interface I1 {...}  
public interface I2 extends I1 {...}  
public class C1 implements I2 {...}  
public class C2 extends C1 {...}
```

Select one:

- ☐ a. I1 var2 = new C1();
- ☒ b. C1 var1 = new I2(); 
- ☐ c. C1 var4 = new C2();
- ☐ d. I2 var3 = new C2();