Guía Java IV

Extraidos de ExamenJavaV3

Exercise 5.- Consider the following Java code snippet

```java
public int divide (int a, int b){
    int c= -1;

    try{
        c = a/b;
    }
    catch(Exception e){
        System.err.print("Exception ");
    }
    finally{
        System.err.println("Finally ");
    }
    return c;
}
```

What will our code print when we call divide (4,0)?

1. Exception Finally

2. Finally Exception

3. Exception

Respuesta: 1) → Al dividir entre 0 se lanza `ArithmeticException` y se entra al bloque `catch` imprimiendo `"Exception"`. Posteriormente se imprime `"Finally"`.

Exercise 6.- The feature which allows different methods to have the same name and arguments type, but the different implementation is called?

1. Overloading

2. Overriding

3. Java does not permit methods with same and type signature

4. None of the above

Respuesta: 2) → Override se realiza cuando se tiene el mismo nombre y los mismos argumentos.

Exercise 7.- What does the following for loop output?

```java
for (int i=10, j=1, i>j; --i, ++j)
System.out.print(j %i);
```

Pick one of the choices:

1. 12321

2. 12345

3. 11111

4. 00000

Respuesta: 2)

Exercise 11.- We perform the following sequence of actions:

1. Insert the following elements into a set: 1,2,9,1,2,3,1,4,1,5,7.

2. Convert the set into a list and sort it in ascending order.

Which option denotes the sorted list?

Pick one of the choices:

1. {1, 2, 3, 4, 5, 7, 9}

2. {9, 7, 5, 4, 3, 2, 1}

3. {1, 1, 1, 1, 2, 2, 3, 4, 5, 7, 9}

4. None of the above

Respuesta: 1) → Al estar en un `set` se eliminan los elementos duplicados, y los números `Integer` son duplicados debido al pool de `Integer` , por lo que al final quedan valores no repetidos.

Exercise 14.- What is the output for the below Java code?

```java
public class Test{
    public static void main (String[] args)
     {
         int i = 010;
         int j = 07;
         System.out.println(i);
         System.out.println(j);
     }
}
```

Pick one of the choices:

1. 8 7

2. 10 7

3. Compilation fails with an error at line 3

4. Compilation fails with an error at line 5

Respuesta: 1) → Las variables `i,j` se inicializan con valores octales, `010 -> 8` y `07 -> 7`

Exercise 15.- A public data member with the same name is provided in both base as well as derived clases. Which of the following is true?

Pick one of the choices:

1. It is a compiler error to provide a field with the same name in both base and derived class

2. The program will compile and this feature is called overloading

3. The program will compile and this feature is called overriding

4. The program will compile and this feature is called as hiding or shadowing

Respuesta 4)

Exercise 16.- Given three clases A, B and C.

B is a subclass of A

C is a subclass of B

Which one of these boolean expressions is true only when an object denoted by reference `o` has actually been instantiated from class B, as opposed to from A or C?

Pick one of the choices:

1. (o instanceof B) && (! (o instanceof A))
2. (o instanceof B) && (! (o instanceof C))
3. (o instanceof B)
4. None of the above

Respuesta: 2) → Verifica que sea instancia de `B` y de `C` , además de devolver `true` cuando se cumple que sea `B` .

Exercise 17.- Which statement is true?

Pick one of the choices:

1. Non-static member classes must have either default or public accessibility
2. All nested classes can declare static member classes
3. Methods in all nested classes can be declared static
4. Static member classes can contain non-static methods

Respuesta: 4) → Los miembros de instancia (atributos de instancia) pueden tener cualquier modificador de acceso. | Solo las clases anidadas estáticas (static nested classes) pueden contener miembros estáticos. Las clases internas no estáticas no pueden tener miembros estáticos. | Solo las clases anidadas estáticas pueden tener métodos estáticos. Las clases internas no estáticas no pueden tener métodos estáticos.

Exercise 18.- A constructor is called whenever

Pick one of the choices:

1. An object is declared
2. An object is used
3. A class is declared
4. A class is used

Respuesta 1) 2) ???

Exercise 20.- Which of the following data types in Java are primitive?

Pick one of the choices:

1. String
2. Struct
3. Boolean
4. char

Respuesta: 4)

Exercise 21.- Which of the following are true for Java Classes?

Pick one of the choices:

1. The Void class extends the Class class
2. The Float class extends the Double class

3. The System class extends the Runtime class

4. The Integer class extends the Number class

Respuesta: 4)

Exercise 22.- The following code snippet is a demostration of a particular design pattern. Which desing pattern is it?

```java
public class Mystery{
    private static Mystery instance = null;
    protected Mystery(){
        public static Mystery getInstance(){
            if(instance == null){
                instance = new Mystery();
            }
            return instance;
        }
    }
}
```

Pick one of the choices:

1. Factory Design Pattern

2. Strategy Pattern

3. Singleton

4. Facade Design Pattern

Respuesta: 3)

Exercise 23.- Which of the following Java declaration of the String array is correct?

Pick one of the choices:

1. String temp [] = new String {"j", "a", "z"};

2. String temp [] = {"j" "b" "c"};

3. String temp = {"a", "b", "c"};

4. String temp [] = {"a", "b", "c"};

Respuesta: 4) → El 2) no separa los elementos, 3) no incluye la notación `[]` , 1) No es manera correcta.

Exercise 24.- Which is true of the following program?

```
1 package exam.java;
2
3 public class TestFirstApp {
4⊖     static void doIt(int x, int y, int m) {
5          if(x==5) m=y;
6              else m=x;
7      }
8
9⊖     public static void main(String[] args) {
10          int i=6, j=4, k=9;
11          TestFirstApp.doIt(i, j, k);
12              System.out.println(k);
13      }
14 }
```

Pick one of the choices

1. Doesn't matter what the values of *i* and *j* are, the output will always be *5*.

2. Doesn't matter what the values of *k* and *j* are, the output will always be *5*.

3. Doesn't matter what the values of *i* and *j* are, the output will always be *9*.

4. Doesn't matter what the values of *k* and *j* are, the output will always be *9*.

Respuesta : 3) → Los primitivos nunca son modificados por `doIt()` .

Exercise 25.- Which of the following statements are correct. Select the correct answer.

1. Each Java file must have exactly one package statement to specify where the class is stored.

2. If a java file has both import and package statement, the import statement must come before package statement.

3. A java file has at least one class defined

4. If a java file has a package statement, it must be the first statement (except comments).

Respuesta: 4) → 2) Lo primero que debe ir es el `package` , luego los `import` , 3) No, incluso hay archivos con interfaces. 1) Es posible no tener `package` y trabajar en el default.

Exercise 26.- What is the output for the following program:

```
class Constructor
{
    static String str;
    public void Constructor(){
        System.out.println("In constructor");
        str="Hello World";
    }

    public static void main(String[] args) {

        Constructor c= new Constructor();
        System.out.println(str);
    }

}
```

Pick one of the choices

1. In Constructor

2. Null

3. Compilation Fails

4. None of the above

Respuesta: 2) → `Constructor()` no es un constructor, es un método debido al `void` , cuando se crea la instancia se utiliza el constructor default. `str` se inicializa con `null` .

Exercise 27.- Given the following code, what is the most likely result.

```java
import java.util.*;

public class Compares {

    public static void main(String[] args) {

        String [] cities= {"Bangalore","Pune","San Francisco","New York City"};
        MySort ms= new MySort();
        Arrays.sort(cities,ms);
        System.out.println(Arrays.binarySearch(cities,"New York City" ));
    }

    static class MySort implements Comparator{
        public int compare(String a, String b){

            return b.compareTo(a);
        }

    }

}
```

Pick one of the choices

1. -1

2. 1

3. 2

4. Compilation fails

Respuesta:) →

Exercise 32.- To delete all pairs of keys and values in a given HashMap, which of the following methods should be used? Pick one of the choices

1. clearAll()

2. empty()

3. remove()

4. clear()

Respuesta: 4) → El método `clear()` en un `HashMap` se usa para eliminar todas las entradas (pares de clave-valor) del mapa. Los otros métodos mencionados no son válidos para esta operación en `HashMap` .

Exercise 33.- Which pattern do you see in the code: `java.util.Calendar.getInstance();`

Pick one of the choices

1. Singleton Pattern

2. Factory Pattern

3. Facade Pattern

4. Adaptor Pattern

Respuesta: 1) → En singleton se utiliza `getInstance()` para obtener la instancia de un único objeto.

Exercise 34.- What is the output of the following program:

```java
interface BaseI { void method (); }

class BaseC {
    public void method() {
        System.out.println("Inside BaseC: :method");
    }
}

class ImplC extends BaseC implements BaseI {
    public static void main (String[] s) {
        (new ImplC()).method();
    }
}
```

Pick one of the choices

1. Null

2. Complication fails

3. Inside BaseC::method

4. None of the above

Respuesta 3) → `ImplC` al extender de `BaseC` cumple el contrato de la interfaz `BaseI` y al no tener su propio método invoca al del padre.

Exercise 35.- Consider the following three classes

`class   A  {}`

`class   B extends A {}`

`class   C extends B {}`

Consider an object of class B is instantiated, i.e., `B  b  = new B();`

Which of the following Boolean expressions evaluates to true

Pick one of the choices

1. (b instanceof B)

2. (b instanceof B) && (!(b instanceof A))

3. (b instanceof B) && (!(b instanceof C))

4. None of the above

Respuesta: 1)