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)?

Pick one of the choices:
- Exception Finally
- Finally Exception
- Exception

Exercise 6.-

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

Pick one of the choices:
- Overloading(SobreCarga)
- Overriding (SobreEscritura @Override)
- Java does not permit methods with same and type signature
- None of the above

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:
- 12321
- 12345
- 11111
- 00000

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, 2, 3, 4, 5, 7, 9}
- {9, 7, 5, 4, 3, 2, 1}
- {1, 1, 1, 1, 2, 2, 3, 4, 5, 7, 9}
- None of the above

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:
- 8 7
- 10 7
- Compilation fails with an error at line 3
- Compilation fails with an error at line 5

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:
- It is a compiler error to provide a field with the same name in both base and derived class
- The program will compile and this feature is called overloading
- The program will compile and this feature is called overriding
- The program will compile and this feature is called as hiding or shadowing

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:
- (o instanceof B) && (! (o instanceof A))
- (o instanceof B) && (! (o instanceof C))
- (o instanceof B)
- None of the above

Exercise 17.-

Which statement is true?

Pick one of the choices:
- Non-static member classes must have either default or public accessibility
- All nested classes can declare static member classes
- Methods in all nested classes can be declared static
- Static member classes can contain non-static methods

Exercise 18.-

A constructor is called whenever

Pick one of the choices:

- An object is declared
- An object is used
- A class is declared
- A class is used

Exercise 20.-

Which of the following data types in Java are primitive?

Pick one of the choices:
- String
- Struct
- Boolean
- char

Exercise 21.-

Which of the following are true for Java Classes?

Pick one of the choices:
- The Void class extends the Class class
- The Float class extends the Double class
- The System class extends the Runtime class
- The Integer class extends the Number class

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:
- Factory Design Pattern
- Strategy Pattern
- Singleton
- Facade Design Pattern

Exercise 23.-

Which of the following Java declaration of the String array is correct?

Pick one of the choices:
- String temp [] = new String {"j", "a", "z"};
- String temp [] = {"j" "b" "c"};
- String temp = {"a", "b", "c"};
- String temp [] = {"a", "b", "c"};

Exercise 24.-

Which is true of the following program?

```java
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

- Doesn't matter what the values of *i* and *j* are, the output will always be *5*.
- Doesn't matter what the values of *k* and *j* are, the output will always be *5*.
- Doesn't matter what the values of *i* and *j* are, the output will always be *9*.
- Doesn't matter what the values of *k* and *j* are, the output will always be *9*.

Exercise 25.-

Which of the following statements are correct. Select the correct answer.

- Each Java file must have exactly one package statement to specify where the class is stored.
- If a java file has both import and package statement, the import statement must come before package statement.
- A java file has at least one class defined
- If a java file has a package statement, it must be the first statement (except comments).

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

- In Constructor

- Null

- Compilation Fails

- None of the above

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
- Compilation fails

Resumen gráfico:

```arduino                                                    Copiar código

·den esperado (Ascendente):          {"Bangalore", "New York City", "Pune", "San Francisco"}
·den actual (Descendente):           {"San Francisco", "Pune", "New York City", "Bangalore"}
```

ORDEN

La búsqueda binaria espera encontrar "New York City" en una posición basada en el orden ascendente, pero al estar el arreglo en orden descendente, no lo encuentra correctamente y devuelve -1.

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

a) clearAll()
b) empty()
c) remove()
d) clear()

Exercise 33.-

Which pattern do you see in the code below:
java.util.Calendar.getInstance();
Pick one of the choices

a) Singleton Pattern
b) Factory Pattern
c) Facade Pattern
d) Adaptor Pattern

Exercise 34.-

What is the output of the following program:

```
interface BaseI { void method (); }
      class BaseC
      {
            public void method()
            {
                  System.out.printIn("Inside BaseC: :method");
            }
      }
      class ImplC extends BaseC implements BaseI
      {
            public static void main (String []s)
            {
                  (new ImplC()).method();
            }
      }
```

Pick one of the choices

a) Null
b) Complication fails
c) Inside BaseC::method

d)   None of the above

Exercise 35.-

Consider the following three classes:
```
class A {}
    class B extends A {}
    class C extends B {}
```

Consider n 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

a)   (b instanceof B)
b)   (b instanceof B) && (!(b instanceof A))
c)   (b instanceof B) && (!(b instanceof C))
d)   None of the above

Exercise 36.-

What is the output of the following program:

```
class Constructor
    {
        static String str;
        public void Constructor(){
            System.out.printIn("In constructor");
            str = "Hello World";
        }
        public static void main (String [] args){
            Constructor C = new Constructor ();
            System.out.printIn(str);
```

```
            }
        }
```

Pick one of the choices

a)   In Constructor
b)   Null
c)   Compilation fails
d)   None of the above