## **Assignment 2**

1. Why we need packages in java?

Packages are used in Java in order to prevent naming conflicts, to control access, to make searching/locating and usage of classes, interfaces, enumerations and annotations easier, etc.

2. What is the default imported package?

Java compiler imports java. lang package internally by default.

3. What is Class? What is Object?

a class describes the contents of the objects that belong to it: it describes an aggregate of data fields (called instance variables), and defines the operations (called methods).

an object is an element (or instance) of a class; objects have the behaviors of their class. The object is the actual component of programs, while the class specifies how instances are created and how they behave.

4. Why we need constructor?

A constructor is a special method of a class that initializes new objects or instances of the class. Without a constructor, you can't create instances of the class.

5. What is the default value of local variable? What is the default value of instance variable?

The default value of the local variable is NULL in JAVA, no primitive values or object references

For numbers, the default value is 0, for Booleans it is false, and for object references it is null.

6. What is garbage collection?

Java garbage collection is the process by which Java programs perform automatic memory management.

7. The protected data can be accessed by subclasses or same package. True or false?

True, The protected data is only accessible by the classes of the same package and the subclasses present in any package.

8. What is immutable class?

Immutable class in java means that once an object is created, we cannot change its content

9. What's the difference between "==" and equals method?

In simple words, == checks if both objects point to the same memory location whereas . equals() evaluates to the comparison of values in the objects.

10. What is wrapper class?

A Wrapper class is a class whose object wraps or contains primitive data types.

11. What is autoboxing?

Autoboxing is the automatic conversion that the Java compiler makes between the primitive types and their corresponding object wrapper classes.

- 12. StringBuilder is threadsafe but slower than StringBuffer, true or false? false.
- 13. Constructor can be inherited, true or false? False.
- 14. How to call a super class's constructor? super().
- 15. Which class is the super class of all classes? Object.
- 16. Create a program to count how many files/folders are there inside one folder.
- the count method should take a parameter called Criteria like this: count(Criteria criteria){}
- For Criteria class, multiple conditions should be included such as: folder path, includeSubFolder or not, the extension of the file be counted and so on.
- Optional: Take the input from keyboard.
- Take care of the invalid inputs. Exception handling.
- Get proper result displayed.

"There are XXX file(s) and XXX folder(s) inside folder XXX with extension XXX." or something user friendly.

```
import java.io.File;
import java.util.Scanner;
public class Test {
   public static void main(String[] args) {
```

```
Scanner sc=new Scanner(System.in);
   System.out.println("Enter the Path for Directory/Folder Name");
   String Directory=sc.nextLine();
   System.out.println("Your Directory/folder is :"+Directory);
   File f = new File(Directory);
   int countFiles = 0;
   int countDirectory=0;
   for (File file : f.listFiles()) {
        if (file.isFile()) {
             countFiles++;
        if (file.isDirectory()) {
             countDirectory++;
        }
   System.out.println("Number of files in Directory: " + countFiles+"\nNumber of Sub-directories
"+countDirectory);
  }
}
```