Q9. Explain Encapsulation with an example. (Write at least 30-40 words).

Encapsulation is a fundamental principle of Object-Oriented Programming. It is the process of binding together the data and methods related to the same object into a single unit. This enables us to write reusable programs and also restrict direct access to the data and methods of an object. This can be achieved by using access modifiers and declaring the fields as private in a class. These private fields can then be set or read using setter and getter methods.

For example, in the below Student class, the properties or methods related to a student are enclosed in one unit and these properties cannot be read or set outside the class due to private access modifier without a getter or setter method.

```
public class Student{
        private String name;
        private String emailId;
        private int id;

        public void setId(id){ this.id = id };
        public void getId(){ return id; }
        pubic void enrollCourse() {}
}
```

Q10. What is Java Garbage Collection? How It Works? What is finalize method in Java? When does an Object becomes eligible for Garbage collection in Java?

Java Garbage Collection is an automatic memory management process in java. When java program runs on JVM, objects are created on heap. When that object is no longer needed the garbage collector will find and delete unused objects and free up memory.

The finalize method in java is invoked by the Garbage Collector on object with no references. It is used to perform clean up or some final operations before the object is removed from memory.

An object becomes eligible for Garbage Collection in java when there are no references to that object and it is unreachable.