Daffodil International University
Department of Software Engineering
Faculty of Science & Information Technology
Final Examination, Fall 2024
Course Code: SE 221; Course Title: Object Oriented Design
Sections & Teachers: [40(A-C)]AG, [40(D-G)]MBH, [40(H-I)]DB

Time: 1:30 Hrs   Marks: 25

Answer ALL Questions
[The figures in the right margin indicate the full marks and corresponding course outcomes. All portions of each question must be answered sequentially.]

1.	a)	Suppose you have to develop a Car booking System for an online platform. All bookings have attributes like a bookingID, customerName, destination, pickUpPoint and approximateCost. But only Premium users can instantly book a vehicle. The Diamond users can set the speed limit for the ride. In this system, one premium or Diamond user can book a vehicle for later which is not available for normal users and this type of booking will provide a discount of 20% from the current fare. Diamond users can play movies during the journey where premium users can play music only. Consider the above scenario and **picturize** a complete class diagram with standard notations. Please remember, you can not disclose the data of one end to another	[Marks-10]	CLO-1 Level-2
2.	a)	In Q1, have you used any kind of Object oriented concept among the 4 pillars? Demonstrate the need of these concepts with some other code examples.	[Marks-3]	CLO-3 Level-3
	b)	When can we use try, catch and finally blocks in JAVA? Examine with a proper scenario while creating an object.	[Marks-2]	

3. **a)** [Marks-8] CLO-2 Level-4

Person
<<Interface>>
- Name : String
- Phone Number : String
- Email Address : String
+PurchaseParkingPass(Address a) : Boolean

Address
- Street : String
- City : String
- State : String
- Postal Code : String
- Country : String
+ Notes() : Void

AttendanceSheet
- Student ID : Long
+ getAttendance(Long ID) : Int

Student (Implements)
- Student ID : Long
- Average Mark : Float
+ IsEligibaleToEnroll() : Boolean
+ getAttendance(attendanceSheet s) : Int

Professor (Implements)
- Salary : Float
+Remarks():String

According to the above class diagram, Figure out proper working code segments together. Must build the main method in a different class and inside the main method, make the object of each class.

b) Figure out the output of the following code [Marks-2]

```
class Vehicle{
  void drive(){
    System.out.println("Driving my
vehicle...");
  }
  void speedUp(){
    System.out.println("Speeding up my
Vehicle...");
  }
}
class Car extends Vehicle{
  void drive(){
    System.out.println("Driving a car...");
  }
}
```

```
class Main{
  public static void
main(String[] args){
    Vehicle v = new Car();
    v.drive();
    v.speedUp();
    Car c = new Vehicle();
    c.drive();
  }
}
```