Subject Code...IT-201.... Enrollment No.....

MID TERM EXAMINATION- February 2024

Subject: Java Programming **Time: 01Hr**
Maximum marks: 30

Note: Attempt questions as per Instructions

SECTION-A (Attempt any two questions, Each of 05 Marks)

Q1. Write a Java program to create an abstract class Bird with abstract methods fly() and makeSound(). Create subclasses Eagle and Hawk that extend the Bird class and implement the respective methods to describe how each bird flies and makes a sound.

Q2. Explain the difference between method overriding and method overloading with the help of suitable example.

Q3. What will be the output

```
class A
{
  static String s = "AAA";
   class B
   {
     String s = "BBB";
      void methodB()
      {
        System.out.println(s);
      }
   }
}
public class MainClass
{
  public static void main(String[] args)
  {
    A a = new A();
     System.out.println(a.s);
     A.B b = a.new B();
     System.out.println(b.s);
     b.methodB();
  }
}
```

SECTION-B (Attempt any One question, Each of 10 Marks)

Q.1. Write a Java program to create a vehicle class hierarchy. The base class should be Vehicle, with subclasses Truck, Car and Motorcycle. Each subclass should have properties such as make, model, year, and fuel type. Implement methods for calculating fuel efficiency, distance traveled, and maximum speed.

Q2. Write a Java program to create an interface Drawable with a method area()and draw() that takes no arguments and returns void. Create two classes Circle and Triangle that implement the Drawable interface and override the area() method to draw() their respective shapes.
What will happen to class circle if it fails to implement the interface fully.

SECTION-C (Compulsory, 10 Marks)

Q.1. Java program to find duplicate values in an array of integer values. If duplicate is found throw exception of type DuplicateDetected.