(4) Develop a Java program to create an abstract class named shape that contains two integers and an empty method named printArea(). Provide three classes named Rectangle, Triangle and Circle such that each one of the classes extends the class shape. Each one of the classes contains only the method printArea() that prints the area of given shape

(5) ~~Create a class Book which contains~~

Q

```
abstract class Shape {
    public int dim1;
    public int dim2;

    public Shape(int dim1, int dim2) {
        this.dim1 = dim1;
        this.dim2 = dim2;
    }

    abstract void printArea();
}

class Rectangle extends Shape {
    public Rectangle(int len, int width) {
        super(len, width);
    }

    void printArea() {
        int area = dim1 * dim2;
        System.out.println("Area of Rectangle: " + area);
    }
}

class Triangle extends Shape {
    public Triangle(int base, int height) {
        super(base, height);
    }
}
```

```
    void printArea() {
        double area = 0.5 * dim1 * dim2;
        System.out.println("Area of Triangle : " + area);
    }
}

class Circle extends Shape {
    public Circle(int radius) {
        super(radius, 0);
    }

    void printArea() {
        double area = Math.PI * dim1 * dim1;
        System.out.println("Area of Circle : " + area);
    }
}

public class Main {
    public static void main(String[] args) {
        Rectangle r = new Rectangle(5, 6);
        Triangle t = new Triangle(2, 8);
        Circle c = new Circle(4);

        r.printArea();
        t.printArea();
        c.printArea();
    }
}
```

Area of Rectangle: 30
Area of Triangle: 24.0
Area of Circle: 50.26

5) Develop a Java program to create a Bank that maintains two kinds of account for its customer, one called savings account other current account. The savings account provides compound interest and withdrawal facilities

a) Accept deposit from customer and update the balance
b) Display the balance
c) Compute and deposit interest
d) Permit withdrawal and update the balance

SURYA Gold

Date _____ Page _____

Q

```
import java.util.Scanner;

class Account{
    String customerName;
    long accountNumber;
    String accountType;
    double balance;

    public Account(String customerName, long accountNumber, String accountType, double balance){
        this.customerName = customerName;
        this.accountNumber = accountNumber;
        this.accountType = accountType;
        this.balance = balance;
    }

    public void deposit(double amt){
        balance += amount;
        System.out.println(balance);

    public void displayBalance(){
        System.out.println(accountNumber);
    }

    public void depositInterest(double rate){
        if("Savings".equals(acc.type)){
            double interest = balance*rate/100;
            balance += interest;
            System.out.println(balance);
```

```
} else {
        System.out.println("No interest");
    }
}

public void withdraw(double amt){
    if (amt <= balance){
        balance -= amt;
        System.out.println(balance);
    } else {
        System.out.print("Insufficient funds for withdrawal");
    }
}

class SavAcct extends Account{
    public SavAcct(String customerName, long
        accountNumber, double balance){
    super(customerName, accountNumber, balance)
    }
}

class CurrAcct extend Account{
    double minBalance
    double serviceCharge;

    public CurrAcct(String customerName, long
    accountNumber, double balance, double
    minBalance, double serviceCharge){
```

```
super(customerName, accountNumber, "current", balance);
this.minBalance = minBalance;
this.serviceCharge = serviceCharge;
}

public void withdraw(double amount) {
    if (amount <= balance - minBalance) {
        balance -= amount;
        System.out.println(balance);
    } else {
        System.out.println("Insufficient funds for
            withdrawal. Minimum balance
            requirement");
    }
}

public void checkMinimumBalance() {
    if (balance < minBalance) {
        balance -= serviceCharge;
        System.out.println(balance);
    }
}
}

public class Bank {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
```

```
SavAct savingsAccount = new SavAct(
        "John Doe", 1234567890, 16000);

CurrAct currentAccount = new CurrAct("Jane Roe",
        07356312000.0, 5000.0, 500);

System.out.println("Savings");
savingsAccount.displayBalance();
savingsAccount.deposit(500.0);
savingsAccount.depositInterest();
savingsAccount.withdraw(2000);

System.out.println("Current Account");
currentAccount.displayBalance();
currentAccount.deposit(1000.0);
currentAccount.withdraw(400.0);
currentAccount.checkMinimumBalance();

scanner.close();
}
```

O/P

```
Saving Acc
Balance 16000.0
Enter amt to be deposited
250
Balance 200.0
Enter rate 8
Final amt 216.0
```

Enter card to be withdrawn
670
Balance : 620.0
Current Acc
Balance : 2000.0

Amt to be deposited : 0
Balance 400
Amt to withdrawn 1600
Service charge
Balance : 35.

22/11/24