QUESTION-1

```
import java.util.Scanner;
public class Clock {
	Scanner input=new Scanner(System.in);
	int hours,min,sec;
	void inputData()
	{
		System.out.print("Enter the hours,minutes,seconds : ");
		hours=input.nextInt();
		min=input.nextInt();
		sec=input.nextInt();
	}
	int validate()
	{
		if(hours>=0 && hours<=24)
		{
			if(min>=0 && min<=60)
			{
				if(sec>=0 && sec<=60)
				return 1;
				else
					return 0;
			}
			else
				return 0;
		}
		else
			return 0;
	}
	void setTime()
	{
		if(hours>12)
			{hours=24-hours;
			System.out.println("Time : "+hours+":"+min+":"+sec+" PM");
			}
		else
			System.out.println("Time : "+hours+":"+min+":"+sec+" AM");
	}

	public static void main(String[] args)
	{
		Clock c=new Clock();
		c.inputData();
		if(c.validate()==1)
		{
			System.out.println("Time is valid");
			c.setTime();
		}
		else
```

```
                System.out.println("Time is invalid");
            System.out.println("Parth Patel\n19DCS098");
        }
}
```

OUTPUT:

```
C:\Java\JAVA_SEM_3_University_assignment_1_A\src>java Clock
Enter the hours,minutes,seconds : 22 39 46
Time is valid
Time : 2:39:46 PM
Parth Patel
19DCS098
```

QUESTION-2

```
public class Fibonacci
{
	public static void main(String[] args)
	{
		int sum=0,a=0,b=1;
		System.out.print("Fibonacci series of "+args[0]+" is : "+a+" "+b);
		for(int i=0;i<=Integer.parseInt(args[0]);i++)
		{
			sum=a+b;
			a=b;
			b=sum;
			System.out.print(" "+sum);
		}
		System.out.println("\nParth Patel\n19DCS098");
	}
}
```

OUTPUT:

```
C:\Java\JAVA_SEM_3_University_assignment_1_A\src>javac Fibonacci.java

C:\Java\JAVA_SEM_3_University_assignment_1_A\src>java Fibonacci 9
Fibonacci series of 9 is : 0 1 1 2 3 5 8 13 21 34 55 89
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```

QUESTION-3

```
public class Ball
{
	float x,y,xDelta,yDelta;
	int radius;
	Ball(float x,float y,int speed,int direction)
	{
		setX(x);
		setY(y);
		setxDelta(xDelta);

	}
	float getX() {
		return x;
	}
	void setX(float x) {
		this.x = x;
	}
	float getY() {
		return y;
	}
	void setY(float y) {
		this.y = y;
	}
	float getxDelta() {
		return xDelta;
	}
	void setxDelta(float xDelta) {
		this.xDelta = xDelta;
	}
	float getyDelta() {
		return yDelta;
	}
	void setyDelta(float yDelta) {
		this.yDelta = yDelta;
	}
	int getRadius() {
		return radius;
	}
	void setRadius(int radius) {
		this.radius = radius;
	}
	void move()
	{
		x+=xDelta;
		y+=yDelta;
	}
	void reflectHorizontal()
	{
```

```
                xDelta=-xDelta;
        }
        void reflectertical()
        {
                yDelta=-yDelta;
        }
        public String toString()
        {
                return "Ball[( "+x+","+y+" ),speed=( "+xDelta+","+yDelta+" )]";
        }
}
class Test
{
        public static void main(String[] args)
        {
                Ball b=new Ball(10.1f,20.2f,2,10);
                b.setRadius(15);
                b.setxDelta(0.1f);
                b.setyDelta(0.2f);
                System.out.println("INFO:\n---------------------------------------");
                System.out.println("x= "+b.getX());
                System.out.println("y= "+b.getY());
                System.out.println("delta x= "+b.getxDelta());
                System.out.println("delta y= "+b.getyDelta());
                b.move();
                System.out.println(b.toString());
                b.reflectHorizontal();
                b.reflectertical();
                b.move();
                b.move();
                System.out.println(b.toString());
                System.out.println("Parth Patel\n19DCS098");
        }
}
```

OUTPUT:

```
C:\Java\JAVA_SEM_3_University_assignment_1_A\src>javac Ball.java

C:\Java\JAVA_SEM_3_University_assignment_1_A\src>java Test
INFO:
---------------------------------------
x= 10.1
y= 20.2
delta x= 0.1
delta y= 0.2
Ball[( 10.200001,20.400002 ),speed=( 0.1,0.2 )]
Ball[( 10.0,20.0 ),speed=( -0.1,-0.2 )]
Parth Patel
19DCS098
```

QUESTION-4

```
class Arithmetic
{
	public static void main(String[] args)
	{
		int x=Integer.parseInt(args[0]);
		int y=Integer.parseInt(args[1]);
		String c=args[2];
		int result=0;
		switch(c)
		{
		case "+":
			result=x+y;
			break;
		case "-":
			result=x-y;
			break;
		case "*":
			result=x*y;
			break;
		case "/":
				result=x/y;
				break;

		}
		System.out.println("Result of "+x+" "+c+" "+y+" = "+result);
		System.out.println("PARTH PATEL\n19DCS098");
	}
}
```

OUTPUT:

```
C:\Java\JAVA_SEM_3_University_assignment_1_A\src>javac Arithmetic.java

C:\Java\JAVA_SEM_3_University_assignment_1_A\src>java Arithmetic 20 10 /
Result of 20 / 10 = 2
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```

QUESTION-5

```
class Circle
{
	double radius=1.0;
	String color="red";
	Circle()
	{System.out.println("This is circle");}
	Circle(double radius)
	{
		this.radius=radius;
	}
	Circle(double radius,String color)
	{
		this.radius=radius;
		this.color=color;
	}
	double getRadius() {
		return radius;
	}
	void setRadius(double radius) {
		this.radius = radius;
	}
	String getColor() {
		return color;
	}
	void setColor(String color) {
		this.color = color;
	}
	double getArea()
	{
		return 2*3.14*radius*radius;
	}
	public String toString()
	{
		return "Circle[radius= "+radius+", color= "+color+"]";
	}
}
class Cylinder extends Circle
{
	double height=1.0;
	Cylinder()
	{
		System.out.println("This is cylinder");
	}
	Cylinder(double radius)
	{
		this.radius=radius;
	}
	Cylinder(double radius,double height)
```

```
	{
		this.radius=radius;
		this.height=height;
	}
	Cylinder(double radius,double height,String color)
	{
		this.radius=radius;
		this.height=height;
		this.color=color;
	}
	double getHeight() {
		return height;
	}
	void setHeight(double height) {
		this.height = height;
	}
	double getVolume()
	{
		return 3.14*radius*radius*height;
	}
}
class testCircleCylinder
{
	public static void main(String[] args)
	{
		System.out.println("Circle-1 :\n");
		Circle c1=new Circle();
		System.out.println(c1.toString());
		System.out.println("Circle-2 :\n");
		Circle c2=new Circle(10.0);
		System.out.println(c2.toString());
		System.out.println("Circle-3 :\n");
		Circle c3=new Circle(12.0,"Blue");
		System.out.println(c3.toString());
		System.out.println("-----------------------------------------------------------------------
----");
		System.out.println("For Cylinder-1 :\n");
		Cylinder cy1=new Cylinder();
		System.out.println("Volume : "+cy1.getVolume());
		System.out.println("For Cylinder-2 :\n");
		Cylinder cy2=new Cylinder(10.0);
		System.out.println("Volume : "+cy2.getVolume());
		System.out.println("For Cylinder-3 :\n");
		Cylinder cy3=new Cylinder(11.0,12.0);
		System.out.println("Volume : "+cy3.getVolume());
		System.out.println("For Cylinder-4 :\n");
		Cylinder cy4=new Cylinder(10.0,13.0,"Yellow");
		System.out.println("Volume : "+cy4.getVolume());
		System.out.println("\nPARTH PATEL\n19DCS098");
	}
```

}

OUTPUT:

```
C:\Java\JAVA_SEM_3_University_assignment_1_A\src>javac circleCylinder.java

C:\Java\JAVA_SEM_3_University_assignment_1_A\src>java testCircleCylinder
Circle-1 :

This is circle
Circle[radius= 1.0, color= red]
Circle-2 :

Circle[radius= 10.0, color= red]
Circle-3 :

Circle[radius= 12.0, color= Blue]
--------------------------------------------------------------------------
```

```
For Cylinder-1 :

This is circle
This is cylinder
Volume : 3.14
For Cylinder-2 :

This is circle
Volume : 314.0
For Cylinder-3 :

This is circle
Volume : 4559.28
For Cylinder-4 :

This is circle
Volume : 4082.0

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```