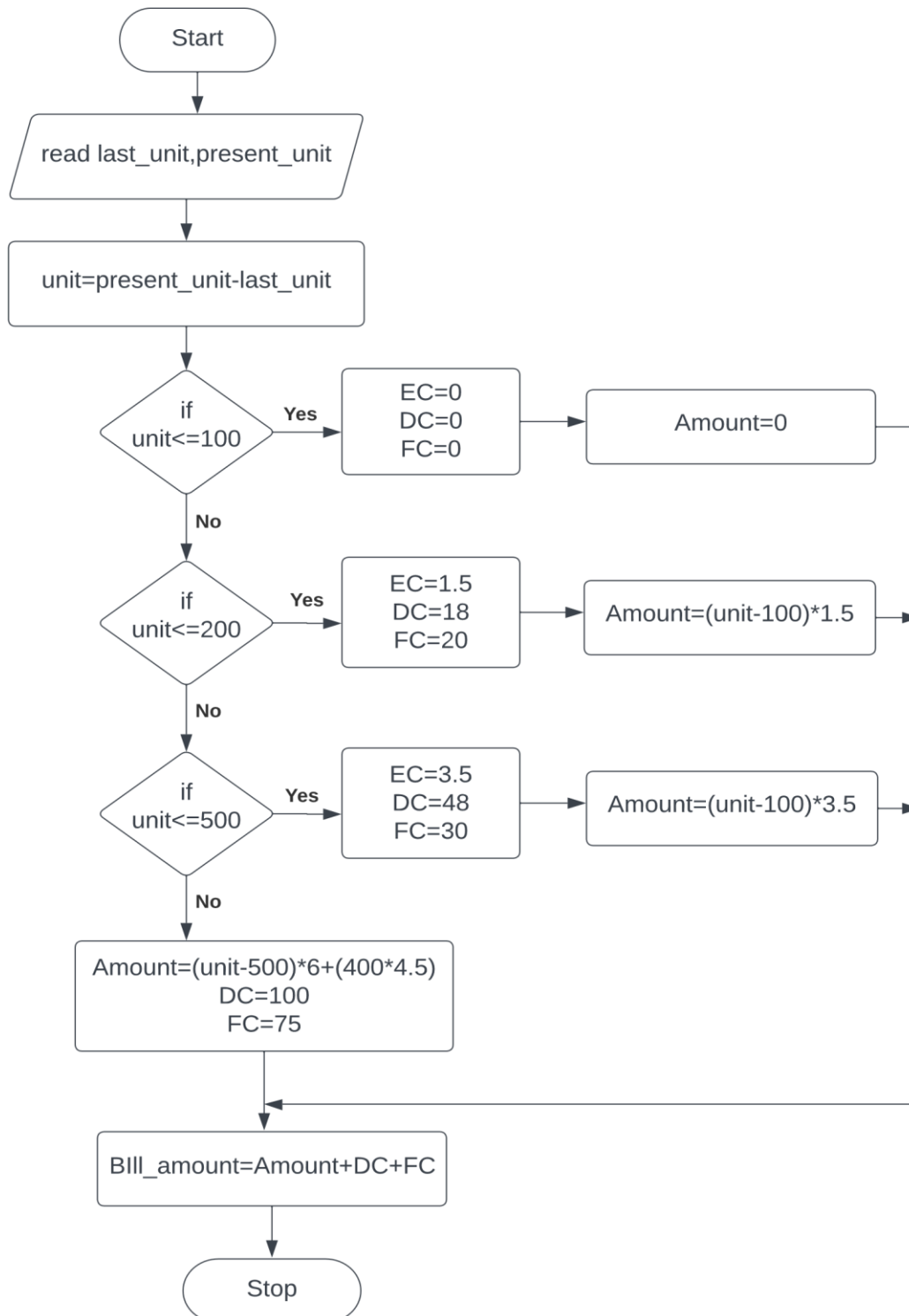


**Expt. No. : 1(a)****ELECTRICITY BILL GENERATION****Date : 21-11-2022****Aim:**

To draw flowchart and algorithm for calculating the electricity bill.

**Algorithm:**

- Step 1** : Start
- Step 2** : read last month unit and present month unit
- Step 3** : unit=present month – last month units
- Step 4** : Check if unit≤100
- Step 4.1** : If Yes, then Amount=0 and go to Step 5
- Step 4.2** : If No, then check if unit≤200
- Step 4.2.1** : If Yes, then assign DC=1.8, FC=20, Amount = (unit-100)\*1.5  
And go to Step 5
- Step 4.2.2** : If No, then check if units≤500
- Step 4.2.2.1** : If Yes, then Amount = (units-100)\*3.5, EC=3.5, DC=48, FC=30  
And go to Step 5
- Step 4.2.2.2** : If No, then Amount = (unit-500)\*6 + (400\*4.5). DC=100, FC=75  
And go to Step 5
- Step 5** : Bill amount = Amount + DC + FC
- Step 6** : display Bill amount
- Step 7** : Stop

**Flowchart:**

**Pseudocode:**

BEGIN

GET last\_unit, present\_unit

COMPUTE = present\_unit – last\_unit

IF unit<=100

    ASSIGN EC=0, DC=0, FC=0, amount=0

    ELSE IF unit<=200

        ASSIGN EC=1.5, DC=18, FC=20

        COMPUTE amount=(unit-100)\*1.5

        ELSE IF unit<=500

            ASSIGN EC=3.5, DC=48, FC=30

            COMPUTE amount=(unit-100)\*3.5

        ELSE

            ASSIGN DC=100, FC=75

            COMPUTE (unit-500)\*6+(400\*4.5)

END IF

COMPUTE bill amount=amount+DC+FC

PRINT bill amount

STOP

**Result:**

The algorithm and flowchart is written for the given problem

**Expt. No. : 1(b)****STUDENT MARK ANALYSIS****Date : 21-11-2022****Aim:**

To draw flow chart and write algorithm for Student Mark Analysis.

**Algorithm:**

**Step 1** : Start

**Step 2** : read No. of students as 'n'

**Step 3** : initialize the counter i=0

**Step 4** : check if i<n

**Step 4.1** : If yes, read m1, m2, m3

**Step 4.2** : Compute  $avg = (m1+m2+m3)/3$

**Step 4.3** : Check if  $avg \geq 80$

**Step 4.3.1** : If Yes, print 'A-grade' and  $i=i+1$  and go to step 4

**Step 4.3.2** : If No, check if  $avg \geq 60$

**Step 4.3.2.1** : If Yes, print 'B-grade' and  $i=i+1$  and go to step 4

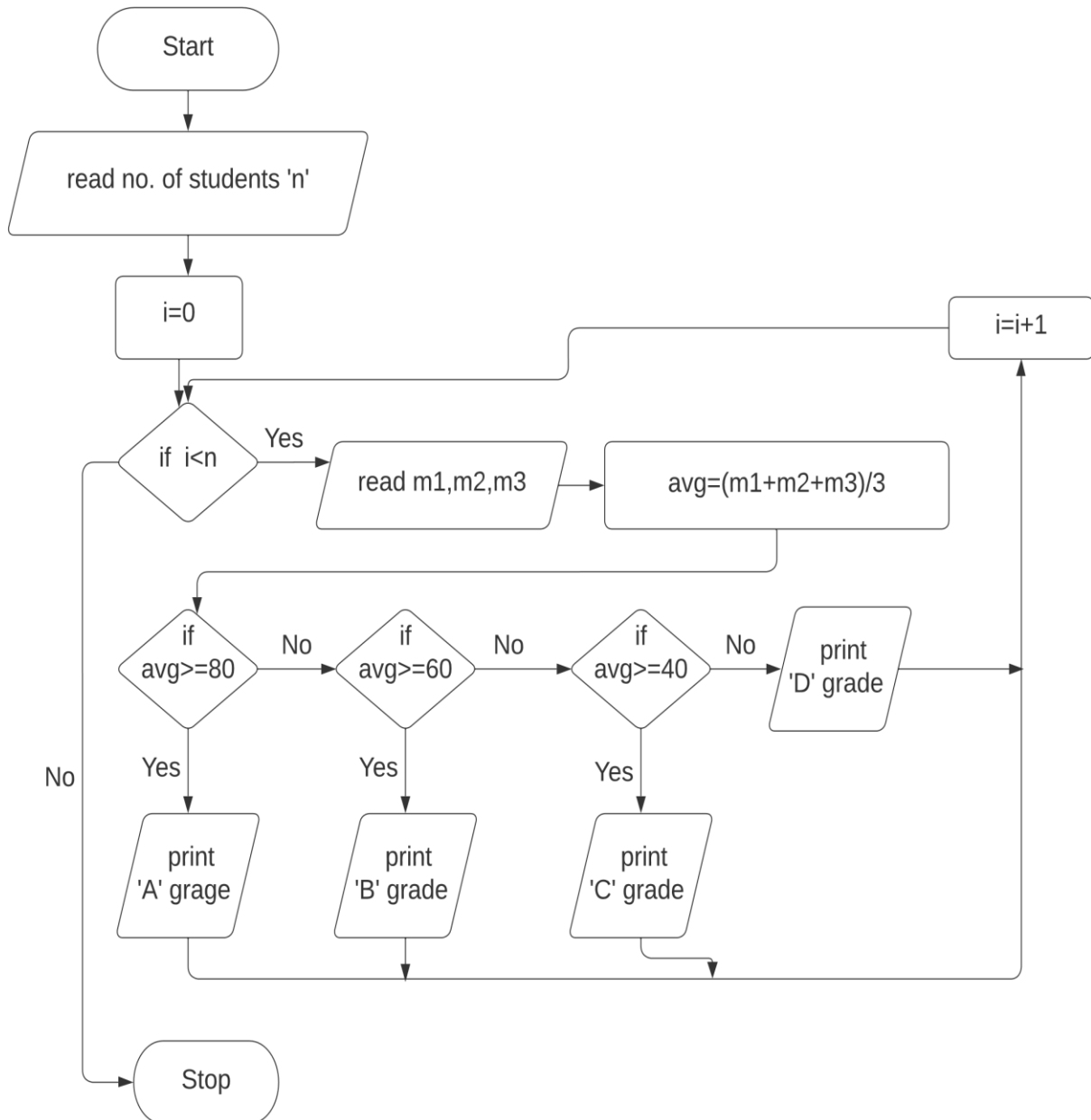
**Step 4.3.2.2** : If No, check if  $avg \geq 40$

**Step 4.3.2.2.1** : If Yes, print 'C-grade' and  $i=i+1$  and go to step 4

**Step 4.3.2.2.2** : If No, print 'D-grade' and  $i=i+1$  and go to step 4

**Step 4.4** : If No, then go to step 5

**Step 5** : Stop

**Flowchart:**

**Pseudocode:**

```
BEGIN

GET n          // number of students
ASSIGN i=0
WHILE I<N
    GET m1, m2, m3

    COMPUTE avg= (m1+m2+m3)/3
    IF avg>=80
        PRINT 'A-grade'
        I=i+1
    ELSE IF avg>=60
        PRINT 'B-grade'
        I=i+1
    ELSE IF avg>=40
        PRINT 'C-grade'
        I=i+1
    ELSE
        PRINT 'D-grade'
        I=i+1
    END IF
END WHILE
END
```

**Result:**

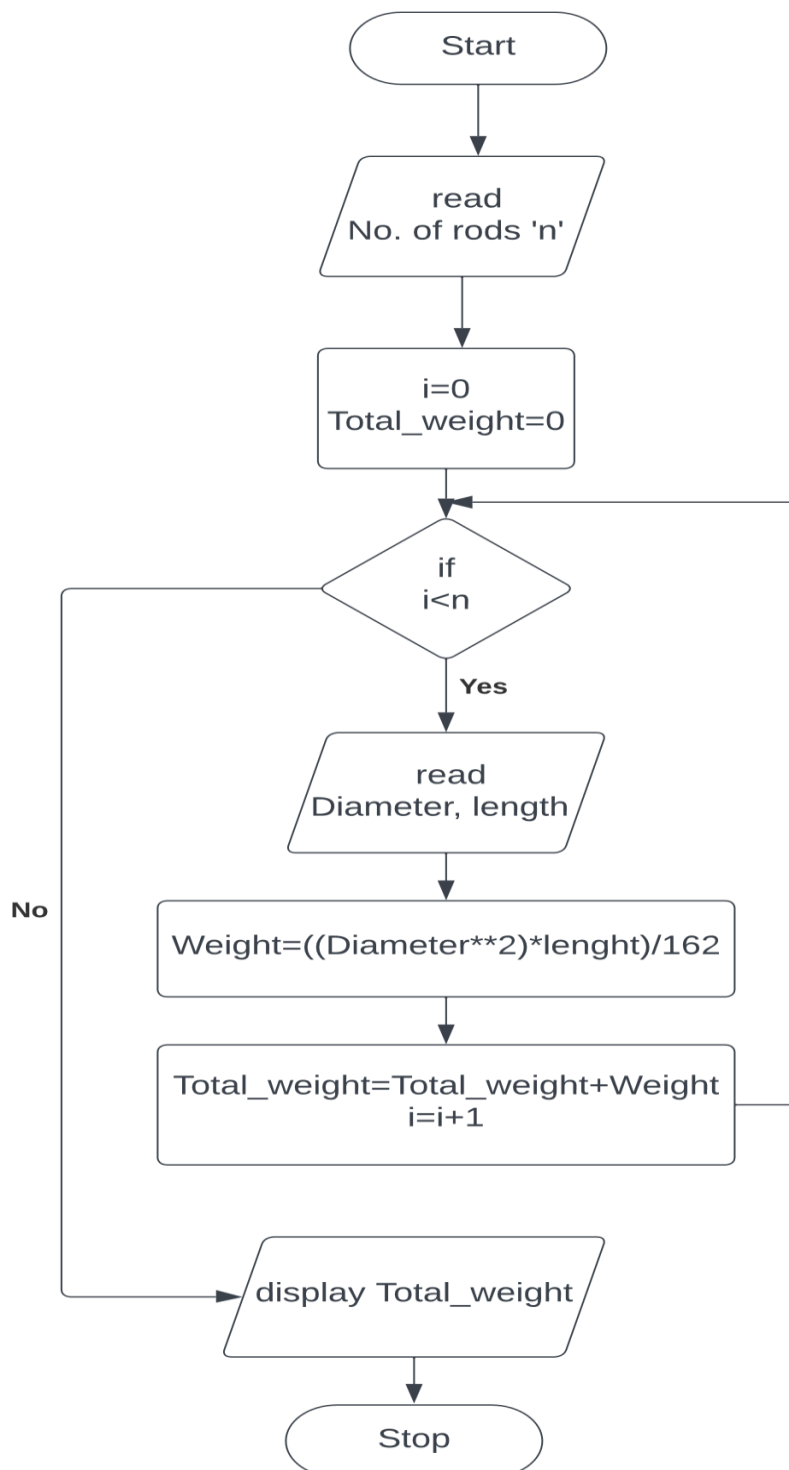
The algorithm and flowchart is written for the given problem

**Expt. No. : 1(c)****WEIGHT OF STEEL BARS****Date : 29-11-2022****Aim:**

To draw flowchart and algorithm for the given problem

**Algorithm:**

- Step 1 : Start
- Step 2 : read value of No. of rods as 'n'
- Step 3 : initialise the counter as i=0
- Step 4 : Total\_weight=0
- Step 5 : Check if i<n
- Step 5.1 : If Yes, then read Diameter, length of rod
- Step 5.2 : Compute  $\text{Weight} = ((\text{Diameter}^2 * \text{D}) * \text{length}) / 162$
- Step 5.3 : Compute  $\text{Total\_weight} = \text{Total\_weight} + \text{Weight}$ ,  $i = i + 1$  and go to step 5
- Step 5.4 : If No, then go to step 6
- Step 6 : display Total\_weight
- Step 7 : Stop

**Flowchart:**



**Pseudocode:**

```
BEGIN

GET n           // number of rods
ASSIGN l=0, Total weight=0
IF i<n
    GET Diameter, length

    COMPUTE weight=((Diameter**2)*length)/162
    COMPUTE Total weight=Total weight+weight
    COMPUTE i=i+1
END IF
PRINT Total weight
END
```

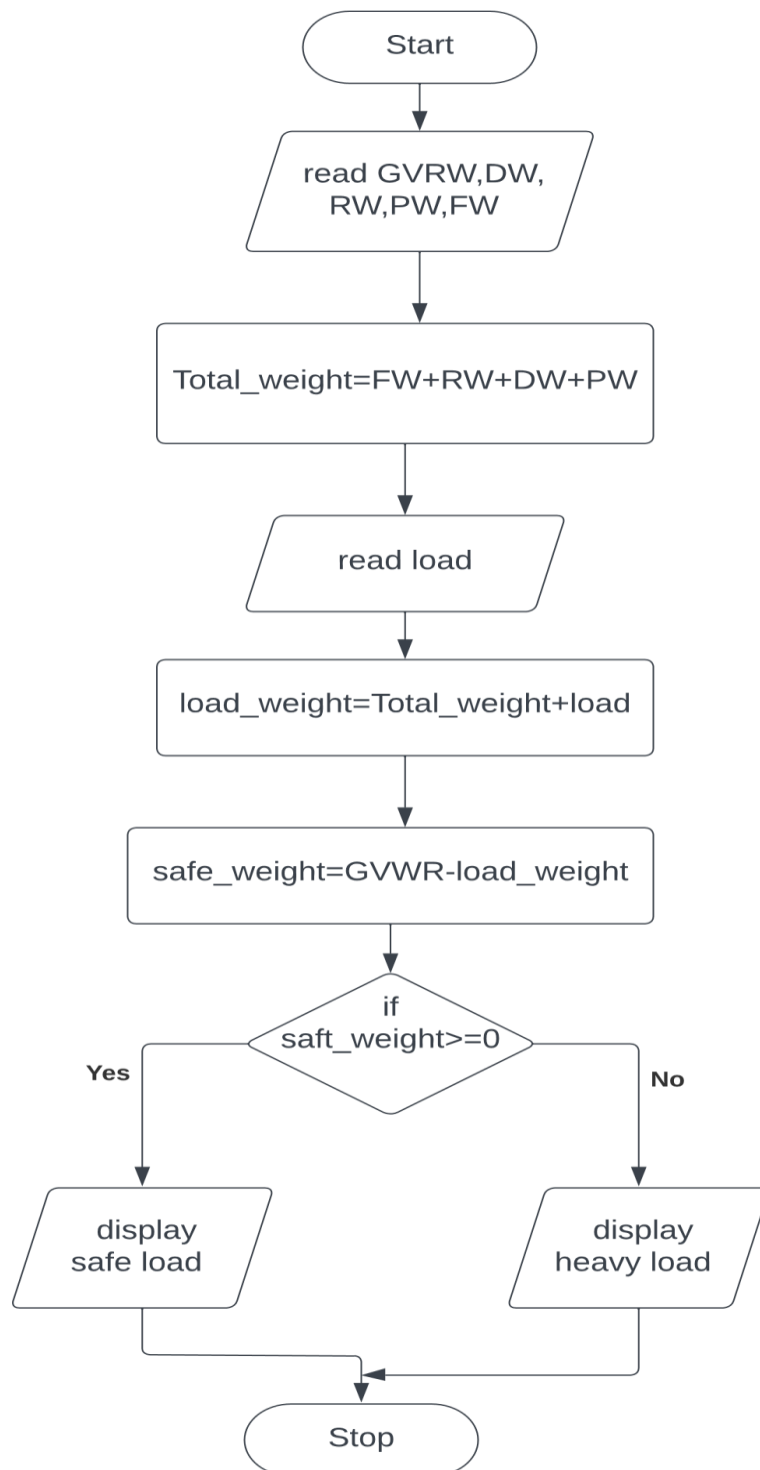
**Result:**

The algorithm and flowchart is written for the given problem.

**Expt. No. :** 1(d)**WEIGHT OF THE MOTOR BIKES****Date :** 29-11-2022**Aim:**

To draw flowchart and write algorithm for the given problem.

**Algorithm:****Step 1** : Start**Step 2** : read GVRW, DW, RW, PW, FW**Step 3** : Compute Total weight= FW+RW+DW+PW**Step 4** : read the value of load**Step 5** : Compute load weight = Total weight+load**Step 6** : Compute safe weight = GVWR – load weight**Step 7** : Check if safe weight  $\geq 0$ **Step 7.1** : If Yes, then display safe load and go to step 8**Step 7.2** : If No, then display heavy load and go to step 8**Step 8** : Stop

**Flowchart:**

**Pseudocode:**

BEGIN

GET GVRW, DW, RW, PW, FW

COMPUTE Total weight-  $FW+RW+DW+PW$

GET load

COMPUTE load weight = Total weight+load

COMPUTE safe weight =  $GVWR - \text{load weight}$

IF safe weight  $\geq 0$

    PRINT safe load

ELSE

    PRINT heavy load

END IF

END

**Result:**

The algorithm and flowchart written for the given problem.

**Expt. No. :** 1(e)**ELECTRICAL CURRENT IN THREE PHASE AC CIRCUIT****Date :** 29-11-2022**Aim:**

To draw flowchart and write algorithm for the given problem

**Algorithm:**

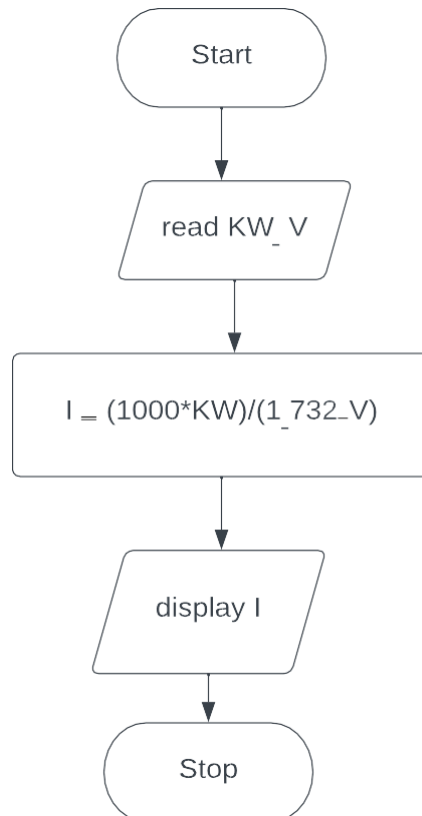
Step 1 : Start

Step 2 : read the values of KW and V

Step 3 : Compute  $I = (1000 * KW) / (1.732 * V)$

Step 4 : display I

Step 5 : Stop

**Flowchart:**

**Pseudocode:**

BEGIN

GET KW, V

COMPUTE  $I = (1000 * KW) / (1.732 * V)$

PRINT I

END

**Result:**

The algorithm and flowchart is written for the given problem.

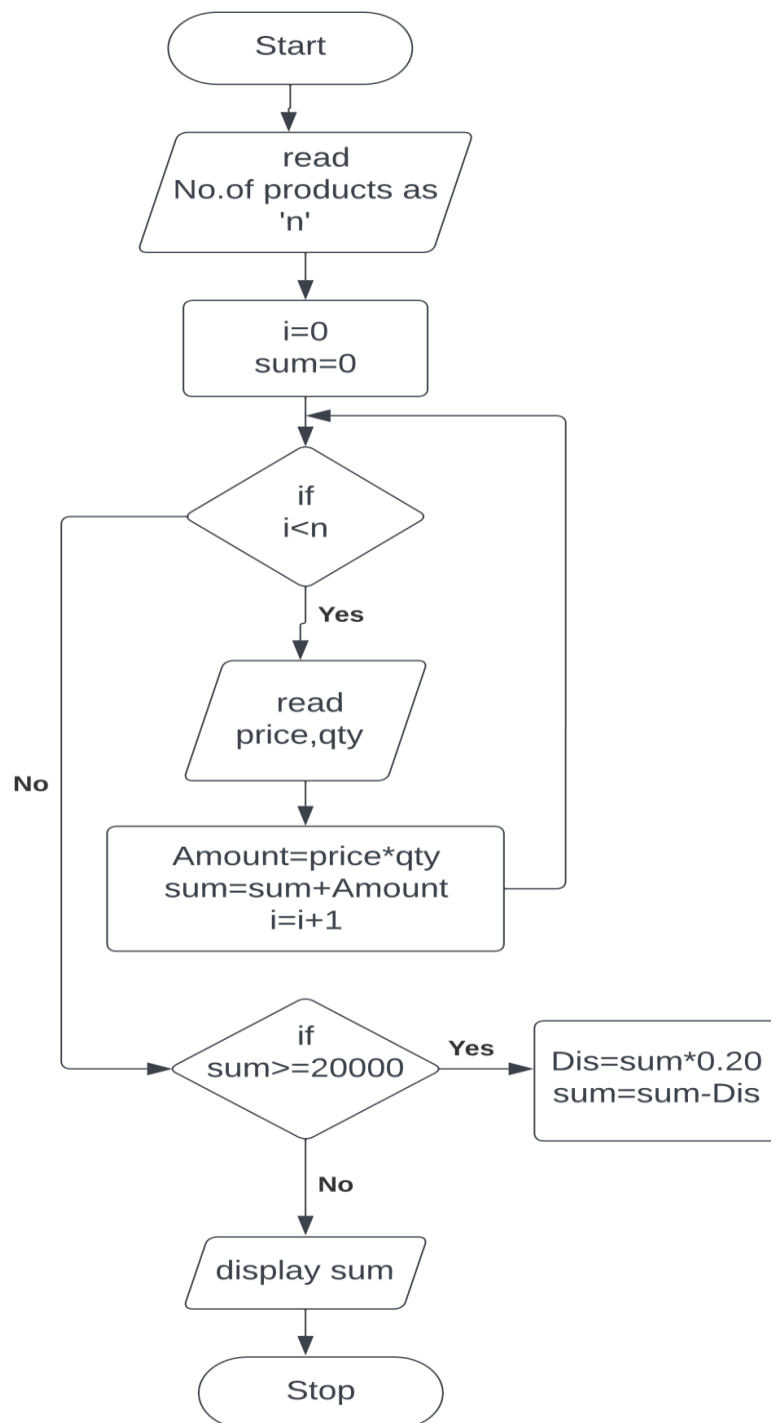
**Expt. No. : 1(f)****RETAIL SHOP BILLING****Date : 21-11-2022****Aim:**

To draw flowchart and algorithm for retail shop billing.

**Algorithm:**

- Step 1 : Start
- Step 2 : read no of products 'n'
- Step 3 : initialize the counter i=0
- Step 4 : sum=0
- Step 5 : Check if i<n
- Step 5.1 : If Yes, then read price, quantity
- Step 5.2 : Compute amount=price\*qty, sum=sum+amount, i=i+1  
And go to step 5
- Step 5.3 : If No, go to step 6
- Step 6 : Check if sum>=2000
- Step 6.1 : If Yes, then Dis=sum\*0.20, sum=sum-Dis
- Step 6.2 : If No, then display sum and go to step 7
- Step 7 : Stop



**Flowchart:**

**Pseudocode:**

```
BEGIN

GET n          // number of products
ASSIGN l=0, sum=0
WHILE i<n

    GET price, qty

    COMPUTE amount=price*qty
    COMPUTE sum=sum+amount
    COMPUTE i=i+1
END WHILE

IF sum>=2000

    COMPUTE Dis=sum*0.20
    COMPUTE sum=sum-Dis
ELSE
    CONTINUE

END IF

PRINT sum

END
```

**Result:**

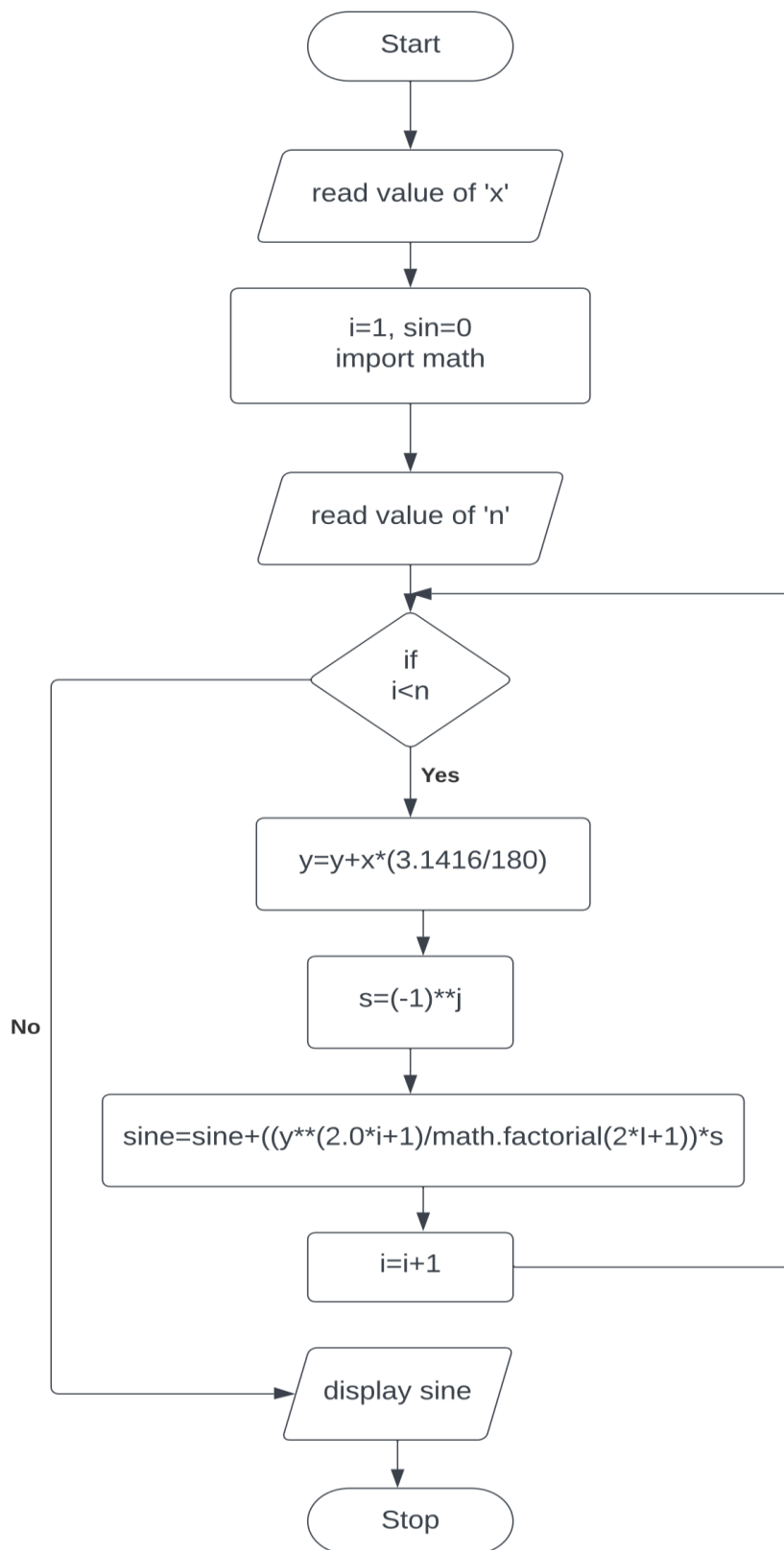
The algorithm and flowchart is written for the given problem.

**Expt. No. : 1(g)****SINE SERIES****Date : 29-11-2022****Aim:**

To draw flowchart and write algorithm for the sine series.

**Algorithm:**

- Step 1 : Start
- Step 2 : read value of x
- Step 3 : Compute  $i=1$ ,  $\text{sine}=0$ , import math
- Step 4 : Check if  $i < n$
- Step 4.1 : If Yes, then  $y=y+x*(3.1416/180)$ ,  $s=(-1)**j$
- Step 4.2 : Compute  $i=i+1$ , go to step 4
- Step 5 : display sine and go to step 6
- Step 6 : Stop

**Flowchart:**

**Pseudocode:**

```
BEGIN
GET x
ASSIGN i=1, sine=0, import math
GET n
WHILE i<n

    COMPUTE  $y=y+x*(3.1416/180)$ 
    COMPUTE  $s=(-1)**j$ 
    COMPUTE  $\text{sine}=\text{sine}+((y**(2*i+1))/\text{math.factorial}(2*i+1))*s$ 
    COMPUTE  $i=i+1$ 
END WHILE

PRINT sine
END
```

**Result:**

The algorithm and flowchart is written for the given problem.