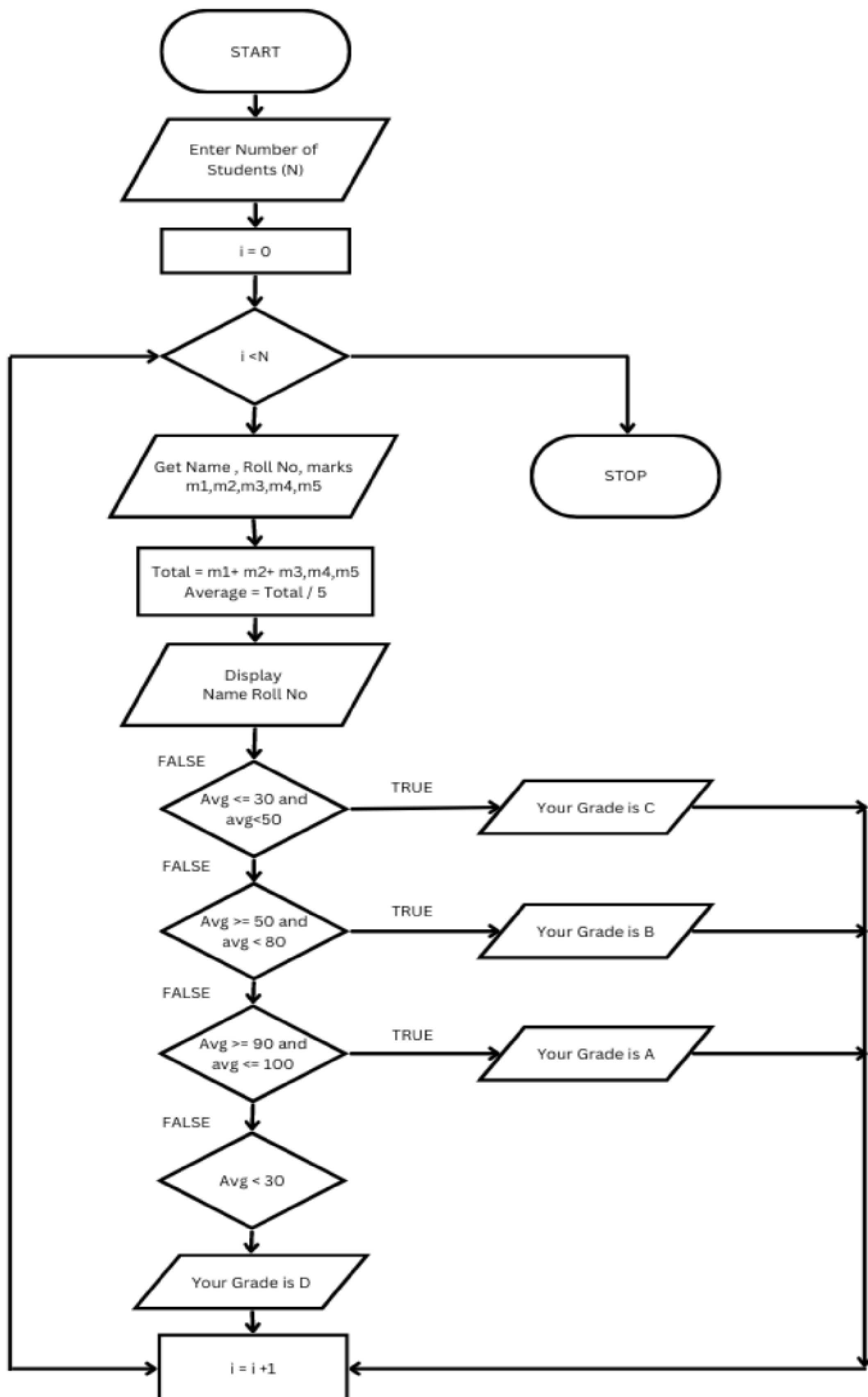


**DRAW FLOWCHART AND WRITE ALGORITHM FOR
THE FOLLOWING PROBLEM**

FLOWCHART:

EXP.NO: 1-A

DATE: 29/11/22



EX NO: 1 – A

DATE: 29/11/22

**DRAW FLOWCHART AND WRITE ALGORITHM FOR
THE FOLLOWING PROBLEM.**

STUDENT GRADE ANALYSIS

AIM:

To draw flowchart and write algorithm for the following problem.

ALGORITHM:

STEP 1: Start.

STEP 2: Get the Number of students (N)

STEP 3: Assign $i = 0$.

STEP 4: Check for the condition $i < N$.

4.1: If True, Get Name, Roll.no and Marks m_1, m_2, m_3, m_4, m_5 .

4.2: Calculate $Total = m_1 + m_2 + m_3 + m_4 + m_5$ and $Average = Total / 5$

4.3: Display Name and Roll Number.

4.4: Check for condition $avg \geq 30$ and $avg < 50$.

4.4.1: If True Display the message your grade is c" and increase i value by 1.

4.5: Check for condition $avg > 50$ and $avg < 80$

4.5.1: If True Display the message "You grade is B" and increase i value by 1.

4.6: Check for the condition $avg > 80$ and $avg \leq 100$

4.6.1: If True Display the message. "Your grade is A" and increase i value by 1.

4.7: Check for the condition $avg < 30$

4.7.1: If True Display the message "Your grade is D".

STEP 5: If False, goto step 9

STEP 9: Stop.

PSEUDO CODE:

START

GET n

INITIALIZE i=0

IF i > n THEN

GET name, Roll no, m1, m2, m3, m4, m5

CALCULATE Total = m1+m2+m3+m4+m5

Average = Total /3

PRINT name , Roll no

IF avg >= 30 and avg < 50 THEN

PRINT Your grade is C

ELIF avg > 50 and avg < 80

PRINT Your grade is B

ELIF avg > 80 and avg ≤ 100

PRINT Your grade is A

ELIF avg < 30

PRINT Your grade is D

ENDIF

ENDIF i=i+1

STOP

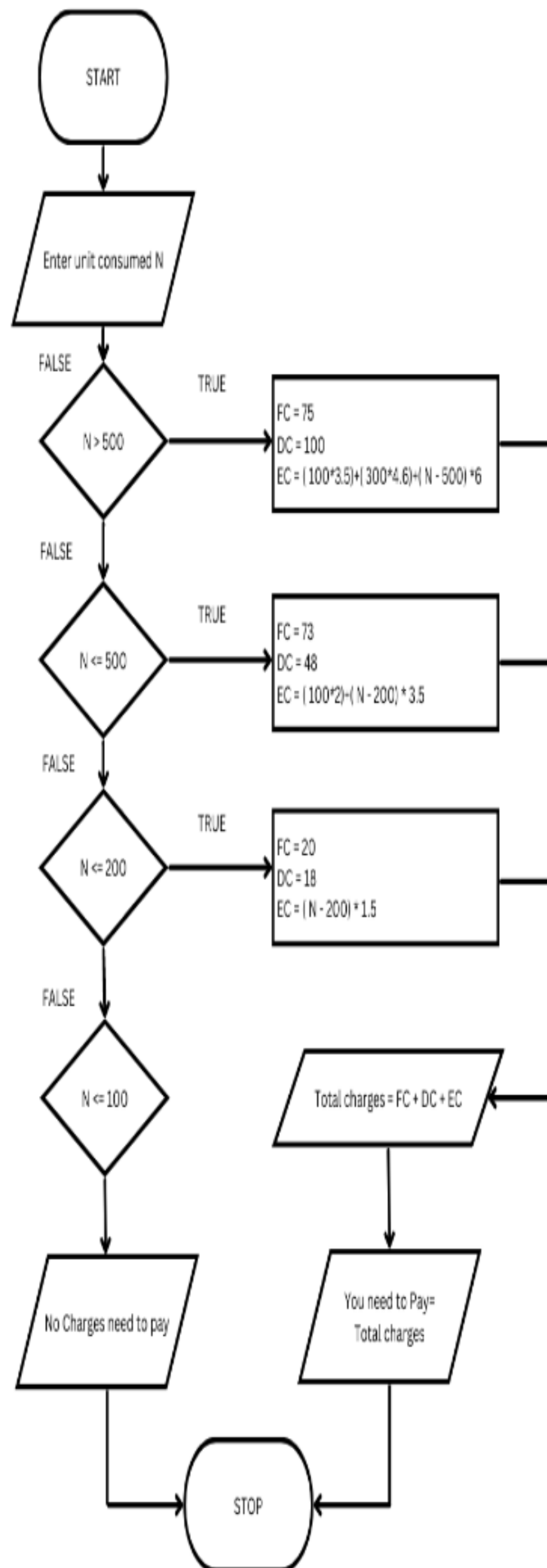
RESULT:

Thus, the algorithm and flowchart are written for the given problem.

FLOWCHART:

EXP.NO: 1-B

DATE: 29/11/22



EX NO: 1 – B

DATE: 29/11/22

DRAW FLOWCHART AND WRITE ALGORITHM FOR THE FOLLOWING PROBLEM.

CALCULATING ELECTRIC BILL

AIM:

To draw flowchart and write algorithm for calculating the electric bill.

ALGORITHM:

STEP 1: Start.

STEP 2: Enter Current Unit (CU).

STEP 3: Enter Old Unit (OU).

STEP 4: Calculate $N = CU - OU$

STEP 5: Check for the condition $N \leq 100$ If true.

5.1: Calculate E.C using formula. $FC = 0, DC = 0, EC = 0$

5.2: Calculate the Total charges = $FC + DC + EC$

5.3: **Display amount needed to pay and go to stop.**

STEP 6: Check for condition $N \leq 200$ If true.

6.1: Calculate E.C using formula $FC = 20, DC = 18, EC = (N - 100) * 1.5$

6.2: Calculate the Total charges = $FC + DC + EC$

6.3: **Display amount needed to pay and go to stop.**

STEP 7: Check condition $N \leq 500$ of take.

7.1: Calculate EC using formula. $FC = 73, DC = 48, EC = (N - 100) * 3.5$

7.2: Calculate the Total charges = $FC + DC + EC$

7.3: Display amount need to pay and goto stop.

STEP 5: Check for the condition $N > 500$ If true.

5.1: Calculate the E.C using the formula $FC = 75, DC = 100, EC = (400 * 4.5) + (N - 500) * 6$

5.2: Calculate Total charges = $FC + DC + EC$

5.3: **Display the amount need to pay and go to stop**

STEP 7: Stop.

PSEUDO CODE:

START

GET CU

```
GET OU
CALCULATE N=CU-OU
IF N<=100 THEN
    FC = 0, DC = 0, EC= 0
    CALCULATE EC
ELIF N<=200 THEN
    FC = 0, DC = 0, EC= 0
    CALCULATE EC = (N - 100) * 1.5
ELIF N<=500 THEN
    FC = 0, DC = 0, EC= 0
    CALCULATE EC = ( N - 100) * 3.5
ELIF N>500 THEN
    FC = 0, DC = 0, EC= 0
    CALCULATE EC = (400 * 4.5) + (N - 500) * 6
ENDIF
PRINT Total Charges = FC + DC + EC
STOP
```

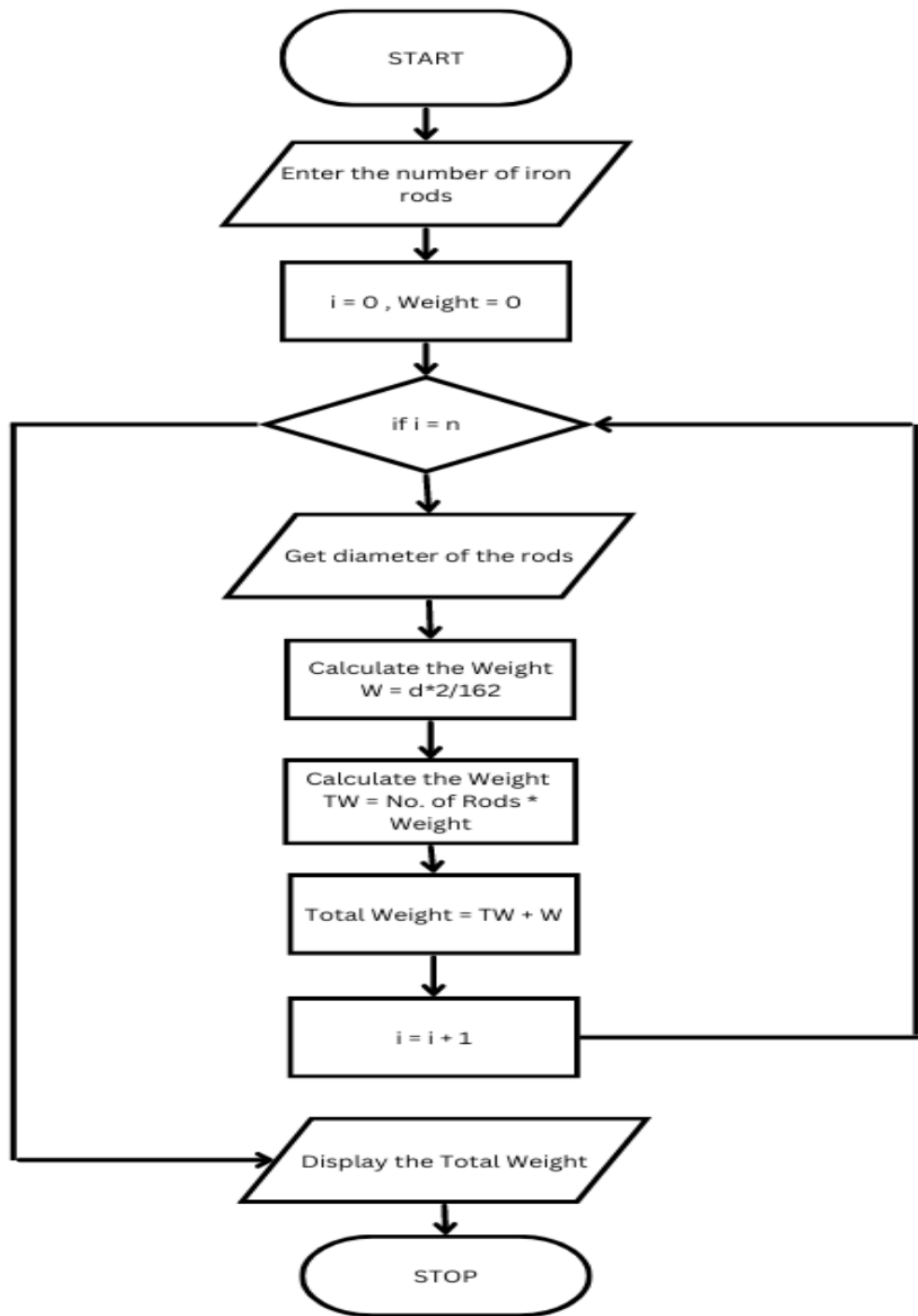
RESULT:

Thus, the algorithm and the flowchart is written for the given problem.

FLOWCHART:

EX NO: 1 - C

DATE: 29/11/22



EX NO: 1 – C

DATE: 29/11/22

DRAW FLOWCHART AND WRITE ALGORITHM FOR THE FOLLOWING PROBLEM.

CALCULATE WEIGHT OF STEEL ROD

AIM:

To draw flowchart and write algorithm for calculating the weight of a steel Rod.

ALGORITHM:

STEP 1: Start.

STEP 2: Get the number of Iron nods.

STEP 3: Initialize the value I and weight as 0.

STEP 4: Chock for the condition $i = n$.

4.1: of true, get the diameter of the rod.

4.2: Calculate the weight-unit-weight using the formula $d^2 / 162 = W$

4.3: Calculate the weight using the formula.

No. of rods x weight - Tw

4.4: Calculate total weight = TW+W.

4.5: Increment the value of i by 1 goto step 4.

4.1: If false display the total weight.

STEP 5: Stop

PSEUDO CODE:

START

GET n

INITIATE $i=0$, Weight=0

IF $i = n$ THEN

GET d

CALCULATE $W = d^2 / 162$

CALCULATE $T_w = T_w + W$

$i=i+1$

ELSE

PRINT T_w

ENDIF

STOP

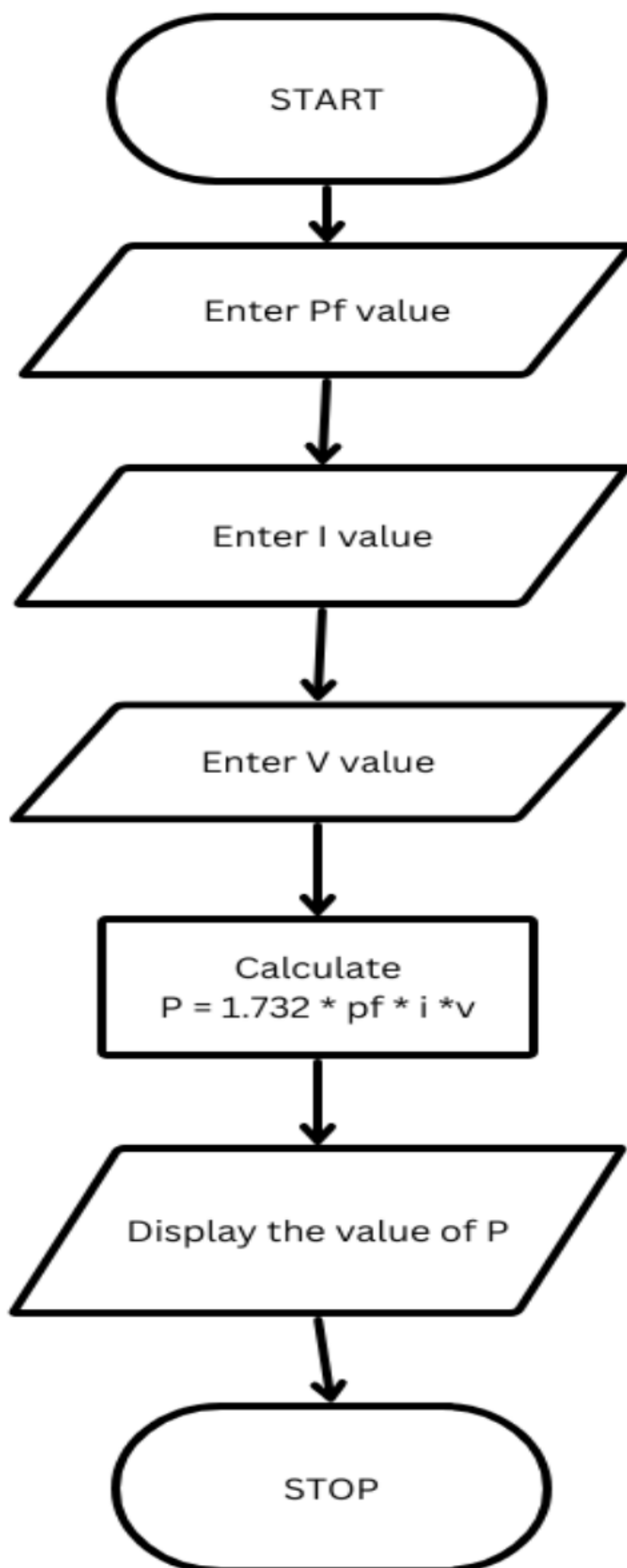
RESULT:

Thus, the algorithm and the flowchart is given for the problem.

FLOWCHART:

EX NO: 1 - D

DATE: 29/11/22



EX NO: 1 – D

DATE: 29/11/22

**DRAW FLOWCHART AND WRITE ALGORITHM FOR
THE FOLLOWING PROBLEM.**

CALCULATE ELECTRIC CURRENT IN 3 PHASE A/C CIRCUIT

AIM:

To draw flowchart and write algorithm. to- calculate electrical current in 3 phase AC circuit.

ALGORITHM:

STEP 1: Start

STEP 2: Get value of pf (power factor)

STEP 3: Get value of Current (I).

STEP 4: Get value of voltage (V)

STEP 5: Calculate P using the formula $P = \sqrt{3} * pf * I * V$.

STEP 6: Display the value of P.

STEP 7: Stop

PSEUDO CODE:

START

GET Pf

GET I

GET V

CALCULATE $P = 1.732 * I * V$

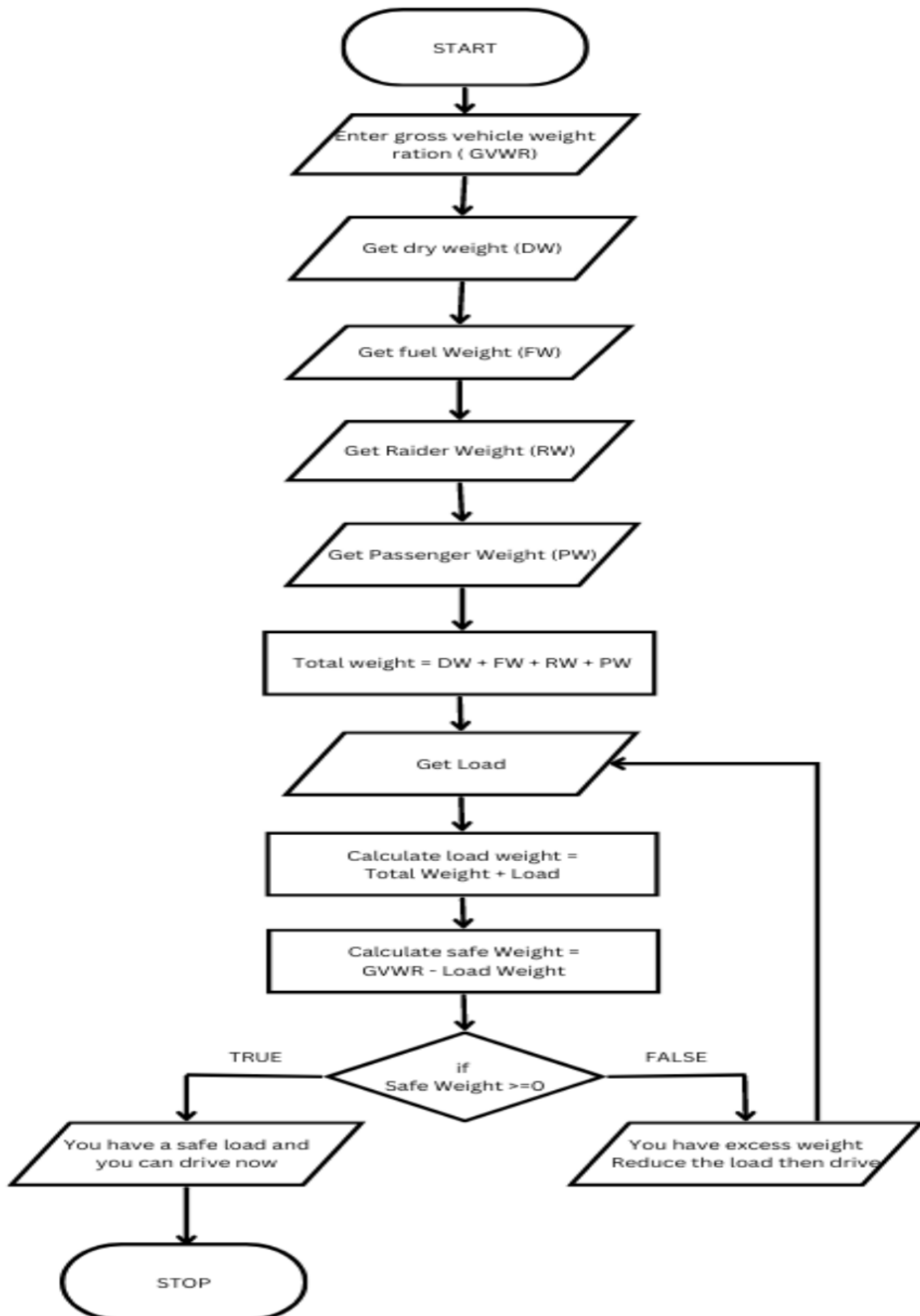
PRINT P

STOP

RESULT:

Thus the flowchart and the algorithm is written for the given problem.

FLOWCHART:**EX NO: 1 – E****DATE: 29/11/22**



EX NO: 1 – E

DATE: 29/11/22

DRAW FLOWCHART AND WRITE ALGORITHM FOR THE FOLLOWING PROBLEM.

CALCULATE WEIGHT OF A MOTORBIKE

AIM:

To draw flowchart and write algorithm for calculating weight of a motorbike.

ALGORITHM:

STEP 1: Start.

STEP 2: Get gross vehicle weight Rating GVWR

STEP 3: Get Dry weight (DW)

STEP 4: Get Fuel weight (FW)

STEP 5: Get Raider weight (RW)

STEP 6: Get Passenger weight (PW)

STEP 7: Calculate Total weight = $DW + FW + RW + PW$

STEP 8: Get Load.

STEP 9: Calculate safe weight. $GVWR - \text{Load-weight}$.

STEP 10: Check the condition safe weight ≥ 0 .

10.1: If true, print the message " You have a safe load and you can drive" goto stop.

10.2: If false, print the message "Reduce the load and then drive" .

10.2.1: GOTO step 8.

STEP 11: Stop.

PSEUDO CODE:

START

GET GVWR

GET DW

GET FW

GET RW

GET PW

CALCULATE Total Weight = DW + FW+ RW + PW

GET Load

CALCULATE Load Weight = Total Weight + Load

CALCULATE Safe Weight = GVWR - Load Weight

IF Safe Weight >= 0 Then

 PRINT You have a safe load and you can drive

ELSE

 PRINT You have excess weight, Reduce the load and then drive

ENDIF

STOP

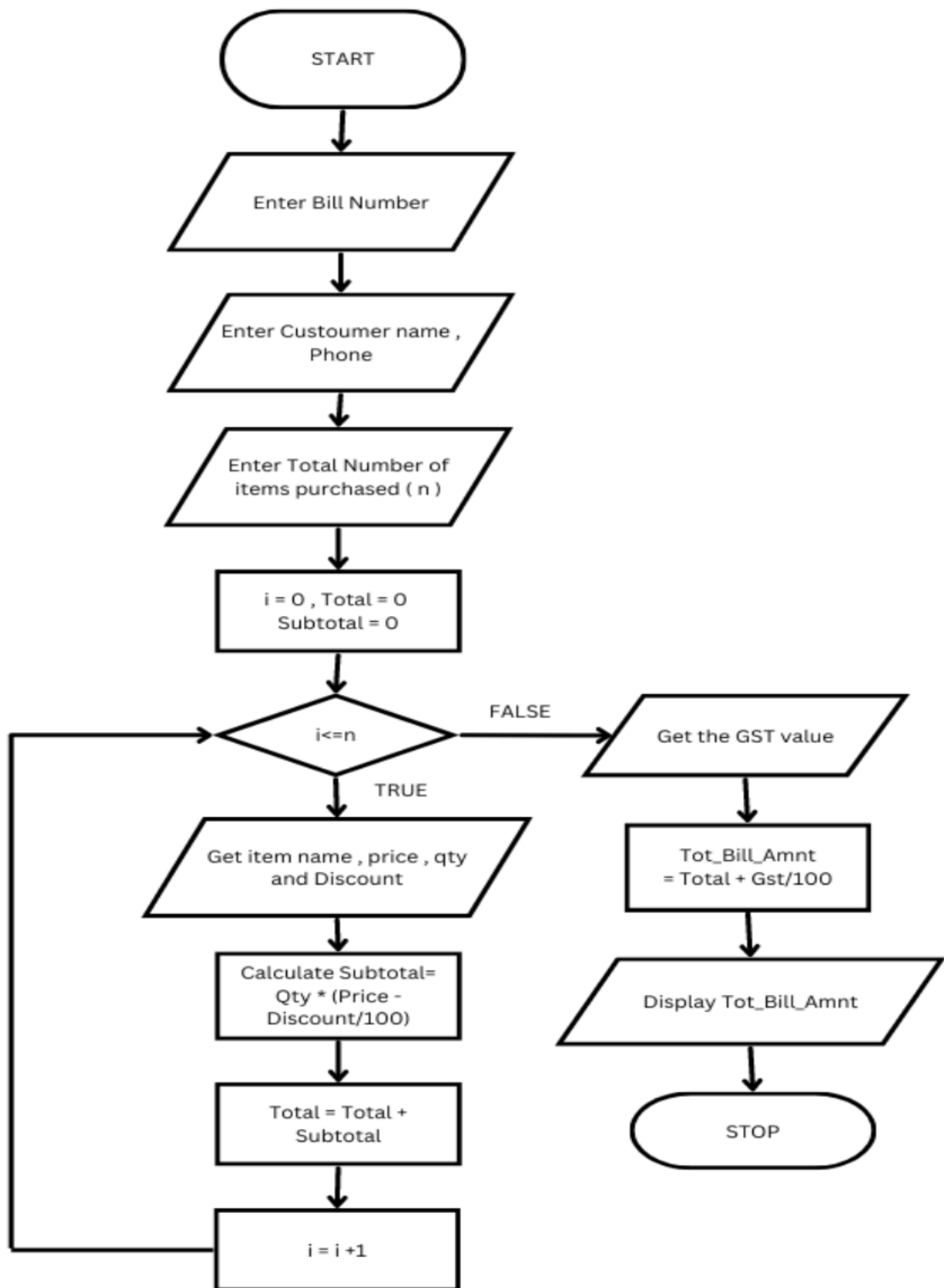
RESULT:

Thus, the flowchart and the algorithm is written for the problem.

FLOWCHART:

EX NO: 1- F

DATE: 29/11/22



EX NO: 1 – F

DATE: 29/11/22

DRAW FLOWCHART AND WRITE ALGORITHM FOR THE FOLLOWING PROBLEM.

RETAIL SHOP.

AIM:

To draw the flowchart and write the algorithm for the retail shop billing.

ALGORITHM:

STEP 1: Start

STEP 2: Get the Bill number.

STEP 3: Get costumer name, Addr, and Ph.no.

STEP 4: Get the value of total No. of Items purchased.

STEP 5: Initialize the values for $i = 0$, Total =0 and. subtotal =0.

STEP 6: Check if condition

6.1: If true, get Item name, Price, Quantity and the discount.

6.2: Calculate the subtotal = Qty * Price - Discount

6.3: Calculate the total = Total + Subtotal.

6.4: Increment the value of i and goto step 6.

STEP 7: of false, get the GST value.

STEP 8: Calculate Total bill amount. Total fast/100.

STEP 9: Display the Total-bill-amount,

STEP 10: Stop.

PSEUDO CODE:

START

GET Bill Number

GET custoumer name , number

INITIALIZE $i=0$, Total=0, Net Amount=0, Gross=0

IF $i \leq n$

 GET Item Name, Price, Quantity, Discount

```
        CALCULATE The Gross = Price * quantity
        CALCULATE The Disc = Gross * Discount%
        CALCULATE The Net Amount = Gross-Disc
        CALCULATE the Total = Total + Net Amount
        i=i+1
ELSE
    GET GST
    CALCULATE GST AMOUNT = (GROSS * GST%) / 100.
    CALCULATE the BILL Price = Net Amount + GST Amount
PRINT BILL Price
ENDIF
STOP
```

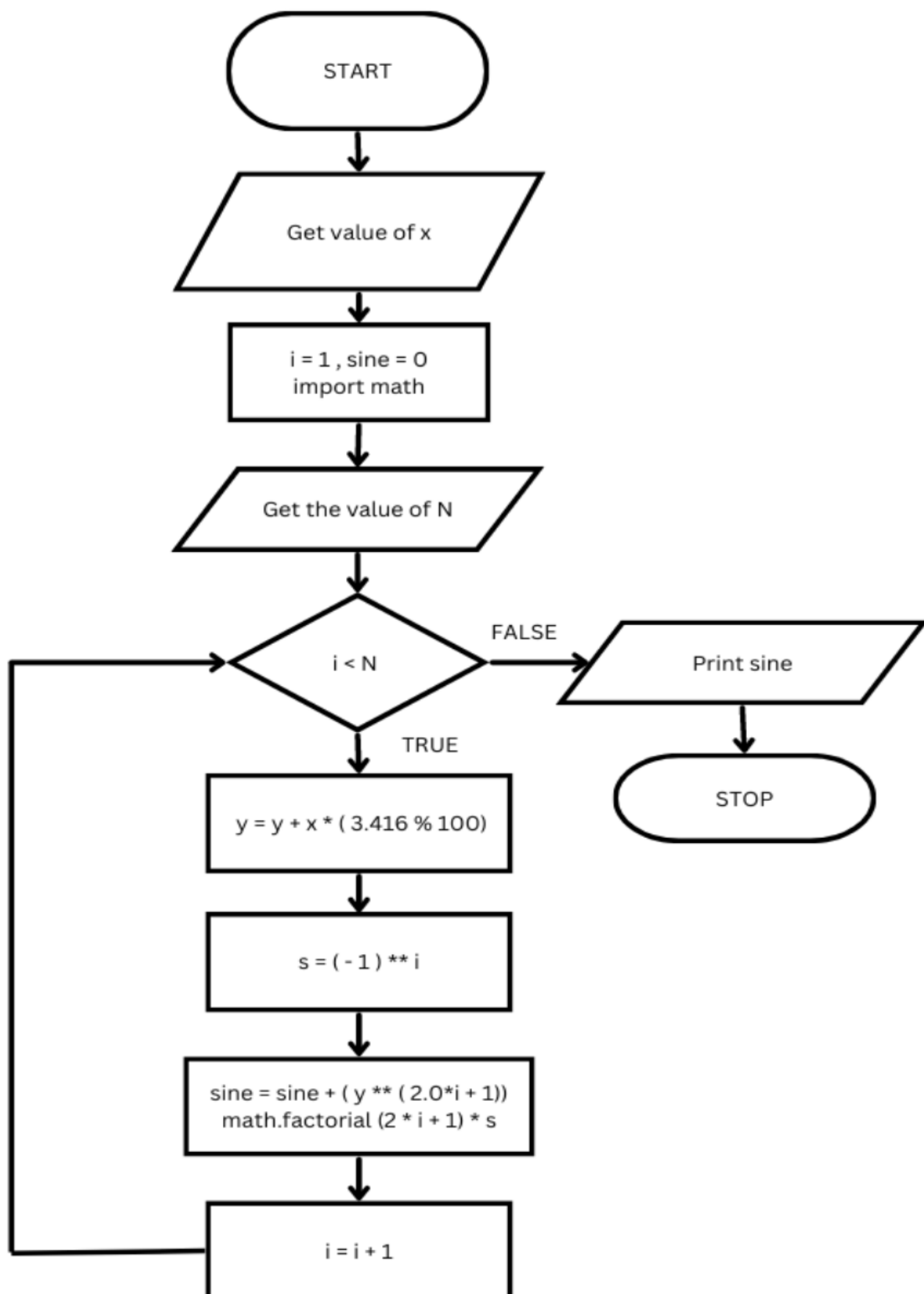
RESULT:

Thus the algorithm and the flowchart is written for the given program.

FLOWCHART:

EX NO: 1 – G

DATE: 29/11/22



EX NO: 1 - G

DATE: 29/11/22

DRAW FLOWCHART AND WRITE ALGORITHM FOR THE FOLLOWING PROBLEM.

SINE SERIES.

AIM:

To draw flowchart and write algorithm for the sine series.

ALGORITHM:

STEP 1: Start.

STEP 2: Get the value of x.

STEP 3: Initialize the values of $i=1$, $\text{sine}=0$ and import math.

STEP 4: Get the value of N.

STEP 5: Check whether value of i less than N

5.1: If condition is true, convert x to radians and adding it to y.

5.1.1: Let value of s be (-1) to the power i

5.1.2: Now calculate the series using the formula.

$\text{Sine} = \text{sine} + ((x^{2*i+1}) / \text{math.factorial}(2*i+1)) * s$

5.1.3: Increment value of i by 1.

5.2 of condition is false display sine.

STEP 6: stop.

PSEUDO CODE:

START

GET x

INITIALIZE $i=1, \text{sine}=0$

IMPORT math

GET n

IF $i < n$

CALCULATE $y = y + x (\sin(x))$

ASSIGN $s = (-1)^i$

CALCULATE $\text{Sine} = \text{sine} + ((y^{2i+1}) / \text{math factorial}(2i+1)) \cdot S$.

$i = i + 1$

ELSE

PRINT Sine

ENDIF

STOP

RESULT:

Thus the algorithm and flowchart written for the given problem.