DRAW FLOWCHART AND WRITE ALGORITHM & PSUEDOCODE FOR THE FOLLOWING PROBLEMS

S.NO	DATE	TITLE	MARKS		SIGNATURE
			OBS.	REC	
1-A	21.11.22	Weight of a steel rod			
1-B	21.11.22	Student Data Analysis			
1-C	21.11.22	Weight of a motor bike			
1-D	21.11.22	Electrical current in 3 phase AC circuit			
1-E	29.11.22	Electric bill			
1-F	29.11.22	Retail shop Billing			
1-G	29.11.22	Sine Series			

TOOLS USED FOR FLOWCHART

- **SMART DRAW – It is quite good & easy to use. But the problem is, we can't save our work anywhere. Even we login & have an account, it doesn't allow us to save. Addition to that, it Ask us to go premium after 7 days of trial. It is perfect to practice.**

- **LUCIDCHART – It is better than smart draw, since we can save our flowcharts. But unfortunately, we can access our flowchart only for 7 days. Same problem plays here as in the smart draw, we need to go premium to access it after 7 days of trial.**

- **GOOGLE DRAW – They are little bit of old design as compared to smart draw & lucidchart. But here we have an advantage of saving a flowchart. We can save our flowcharts in drive after having an account.**

- **DIAGRAMS.NET – It is user friendly & more importantly we can save our work anywhere we want. But it always opens up in the website alone. We can't able to save it as a pdf or doc.**

EX. NO.: 1(a) DATE:	WEIGHT OF STEEL ROD

AIM:

To draw flowchart & write algorithm for calculating weight of Steel Rod.

ALGORITHM:

Step 1: START

Step 2: Read no. of Rods n

Step 3: Assume weight = 0

Step 4: Set count i = 1

Step 5: If count i<=n go to step 6 else go to step 9

Step 6: Read diagonal(D), Length(L)

Step 7: Calculate weight= D*D*L/162

Step 8: Increment i by value 1 go to step 5

Step 9: Print "Total Weight"

Step 10: STOP

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PSUEDOCODE:

BEGIN

READ n

INITIALISE weight=0

FOR i=0 to n, then

READ diagonal(D), length(L)

CALCULATE weight=(D*D*L)/2

INCREMENT i by 1

ENDFOR

END

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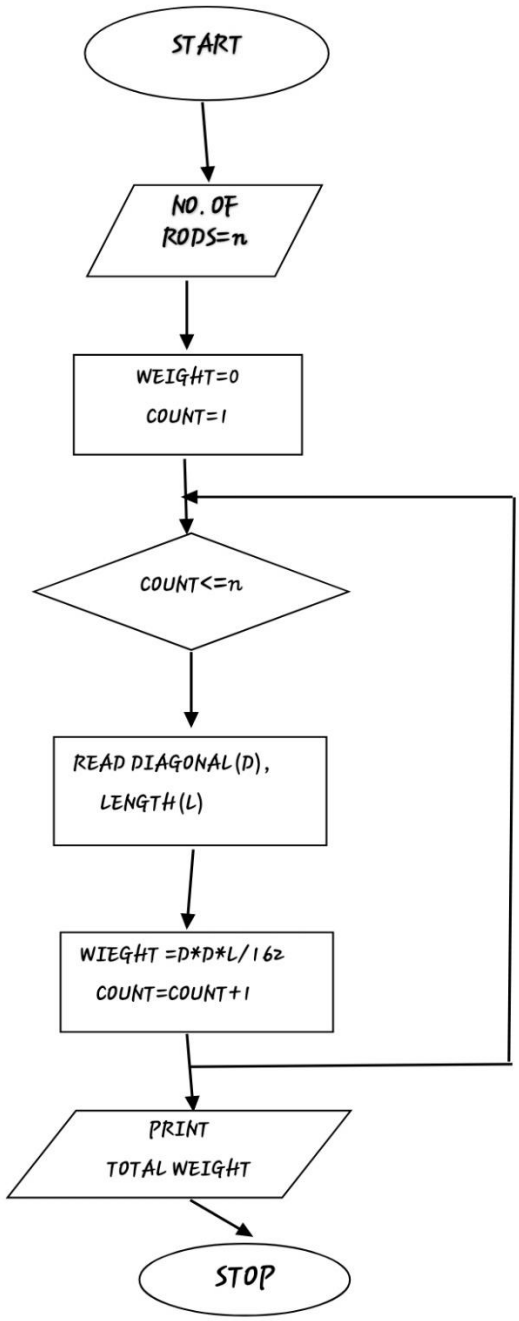
FLOWCHART:



RESULT:

Thus, the flowchart is drawn & algorithm, pseudocode are written to calculate weight of steel rod.

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EX. NO.: 1(b) DATE:	STUDENT DATA ANALYSIS

AIM:

To draw flowchart & write algorithm for Student Data Analysis.

ALGORITHM:

Step 1: START

Step 2: Read No. of students n

Step 3: Set counter i = 1

Step 4: If i<=n go to step 5 else go to step 12

Step 5: Read Name, Roll No., Marks M1, M2, M3

Step 6: Total = (M1, M2, M3)/3

Step 7: 7.1: If Total>=80, then Grade= O else go to step 7.2

7.2: If Total>=60, then Grade= A else go to step 7.3

7.3: If Total>=45, then Grade= B else go to step 7.4

7.4: If Total>=35, then Grade= C else Grade= F

Step 8: Increment i by 1 go to step 4

Step 9: Print Name, Roll No., Grade

Step 10: STOP

PSEUDOCODE:

BEGIN

READ no. of students n

FOR i=1 to n, then

READ Name, Roll.no, Marks M1,M2,M3

CALCULATE Total=(M1+M2+M3)/3

IF Total>=80, then Grade=O

ELIF Total>=60, then Grade=A

ELIF Total>=45, then Grade=B

ELIF Total>=35, then Grade=C

ELSE Grade=F

END IFELSE

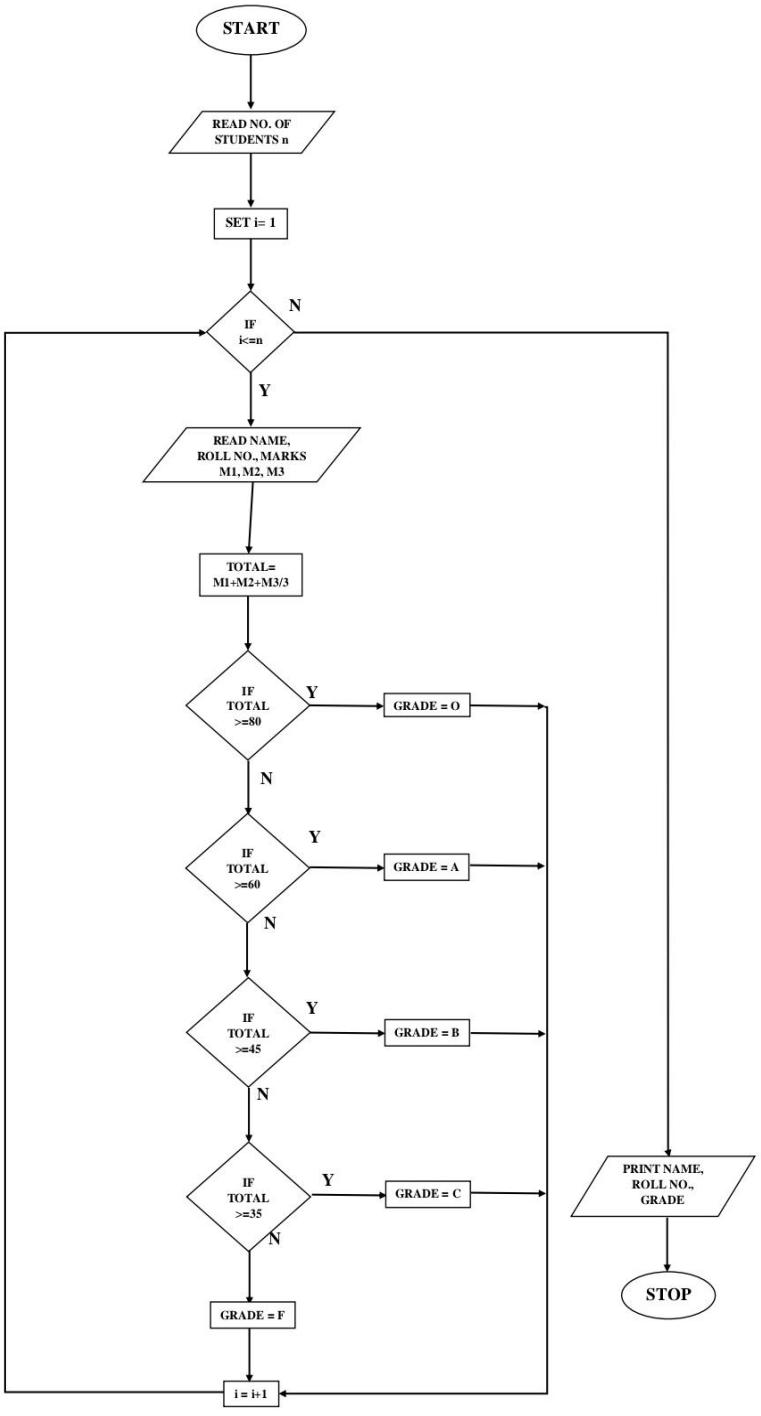
INCREMENT i by 1

END FOR

PRINT Name, Roll no., Grade

END

FLOWCHART:



RESULT:

Thus, the flowchart is drawn & algorithm, pseudocode are written for student data analysis.

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EX. NO.: 1(c)

DATE:

WEIGHT OF MOTOR BIKE

AIM:

To draw flowchart & write algorithm for calculating weight of motor bike.

ALGORITHM:

Step 1: START

Step 2: Read Gross vehicle weight rating (GVWR)

Step 3: Read Dry weight DW, Fuel weight FW, Rider weight RW, Passenger Weight PW.

Step 4: Calculate Total weight= DW+FW+RW+PW

Step 5: Read Load

Step 6: load_weight = Total weight+ load

Step 7: Safe_weight = GVWR – load_weight

Step 8: If safe_weight > 0 go to step 9.1 else go to step 9.2

Step 9: 9.1: Display 'For Safe Journey, reduce weight' go to step 5

9.2: Display 'Safe load, Happy Journey'

Step 10: STOP

PSUEDOCODE:

BEGIN

READ Gross vehicle weight rating GVWR

READ dry weight DW, fuel weight FW, rider weight RW, passenger weight PW

CALCULATE total weight= DW+FW+RW+PW

READ load

COMPUTE load_weight= total weight+load

COMPUTE safe_weight= GVWR-load_weight

IF safe_weight>0, then

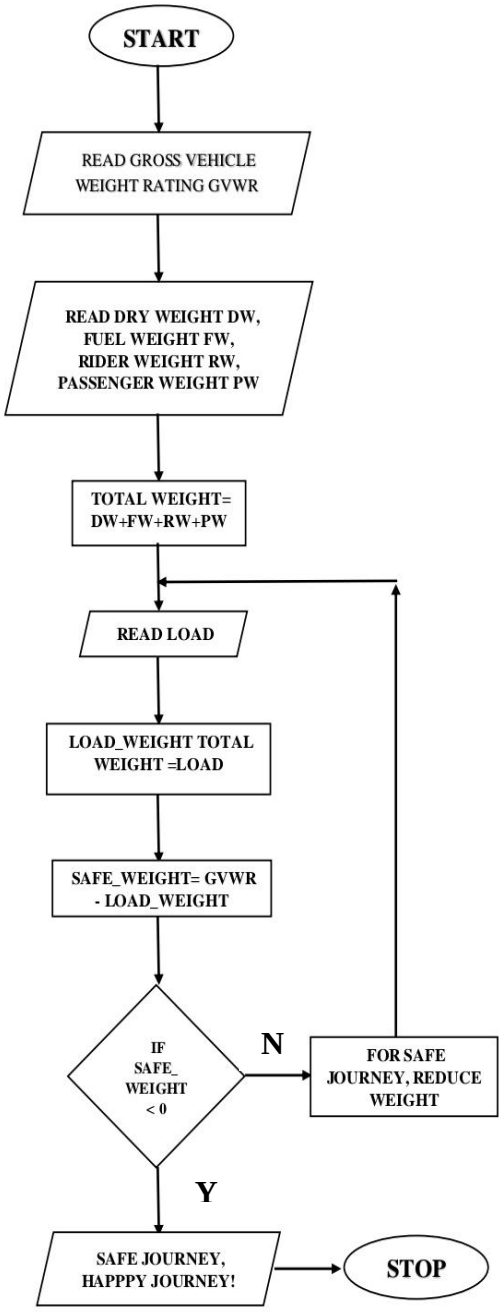
PRINT Safe load, Happy Journey

ELSE

PRINT For safe journey, Reduce weight

END

FLOWCHART:



RESULT:

Thus, the flowchart is drawn & algorithm, pseudocode are written for weight of motor bike.

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EX. NO: 1(d) DATE:	ELECTRICAL CURRENT IN 3 PHASE AC CIRCUIT

AIM:

To draw flowchart & write algorithm for calculating electrical current in 3 phases AC circuit.

ALGORITHM:

Step 1: START

Step 2: Read the values of PF, I, V

Step 3: Calculate W= √3*PF*I*V

Step 4: Print W

Step 5: STOP

PSEUDOCODE:

BEGIN

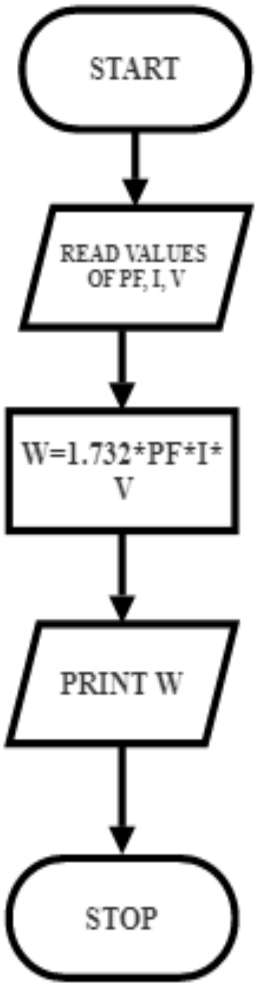
READ values of PF, I, V

COMPUTE W= √3*PF*I*V

PRINT W

END

FLOWCHART:



RESULT:

Thus, the flowchart is drawn & algorithm, pseudocode are written to calculate electrical current in 3 phase AC circuit.

EX. NO.: 1(e) DATE:	ELECTRICITY BILL

AIM:

To draw flowchart & write algorithm for calculating electricity bill.

ALGORITHM:

Step 1: START

Step 2: Read current & prev. month units

Step 3: Calculate Units(consumed) = Current units – prev. month units

Step 4: 4.1: If Units<=100, then E.C = 0; D.C = 0; F.C = 0 go to step 5 else go to Step 4.2

4.2: If Units<=200, then E.C = 1.5*(Units-100); D.C = 18; F.C = 20 go to Step 5 else go to step 4.3

4.3: If Units<=500, then E.C = 3.5*(Units-100); D.C = 48; F.C = 30 go to Step 5 else go to step 4.4

4.4: If Units>500, then E.C = 4.5(400) + 6.0*(Units-500); D.C = 100; F.C = 75 go to step 5

Step 5: Bill = E.C + D.C + F.C

Step 6: Print Bill

Step 7: STOP

PSUEDOCODE:

BEGIN

READ prev. units & current units

COMPUTE Units (consumed)= current units- prev. units

IF Units<=100, then E.C=0; D.C=0; F.C=0

ELIF Units<=200, then E.C=1.5*(units -100); D.C=18; F.C=20

ELIF Units<=500, then E.C=3.5*(units-100); D.C=48; F.C=30

ELSE E.C=4*5(400) +6.0*(units-500); D.C=100; F.C=75

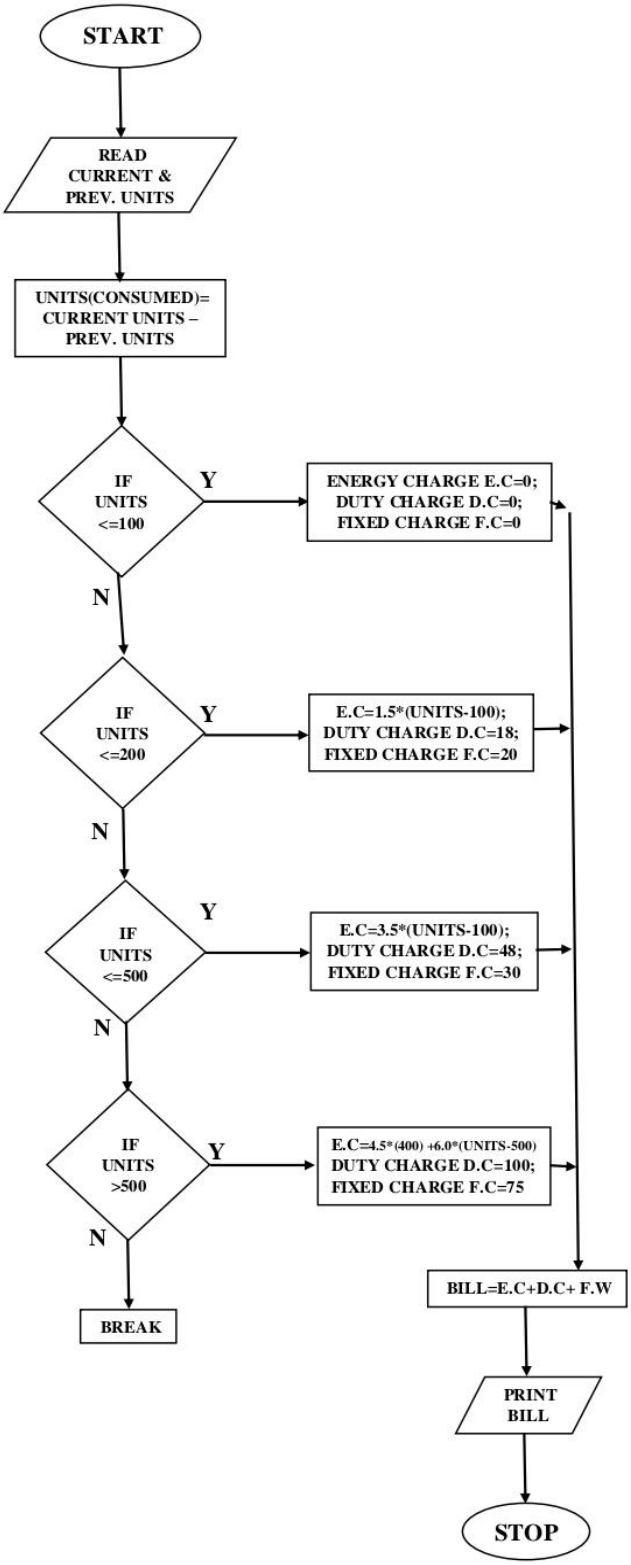
END IFELSE

COMPUTE Bill= E.C+ D.C+ F.C

PRINT Bill

END

FLOWCHART:



RESULT:

Thus, the flowchart is drawn & algorithm, pseudocode are written to calculate electricity bill.

EX. NO.: 1(f) DATE:	RETAIL SHOP BILLING

AIM:

To draw flowchart & write algorithm for calculating retail shop billing.

ALGORITHM:

Step 1: START

Step 2: Read No. of products purchased as n

Step 3: Set counter as i = 1 and total = 0

Step 4: If i<=n go to step 5 else go to step 8

Step 5: Read products' Unit price & No. of items

Step 6: Total = No. of items*unit price

Step 7: Increment i by 1 and go to step 4

Step 8: If total>2000 go to step 9 else go to step 10

Step 9: Net Price = Total-(Total*2/100)

Step 10: Net Price = total

Step 11: STOP

PSEUDOCODE:

BEGIN

READ No. of products n

INITIALSE Total=0

FOR i=1 to n, then

READ unit price & no. of items

CALCULATE total= no. of items*unit price

INCREMENT i by 1

ENDFOR

IF total>2000, then Net price= total-(total*2/100)

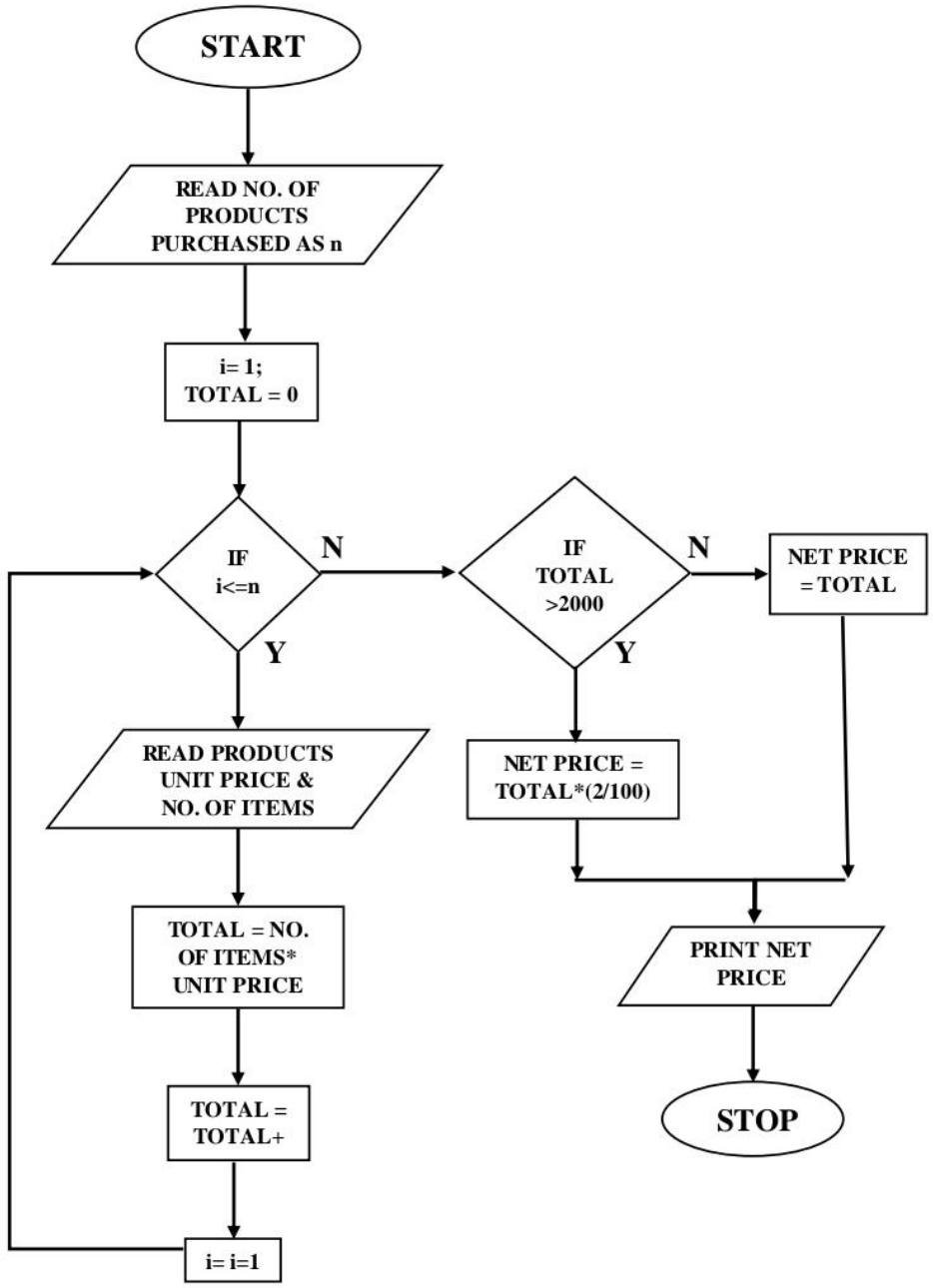
ELSE Net price=total

END IFELSE

PRINT Net price

END

FLOWCHART:



RESULT:

Thus, the flowchart is drawn & algorithm, pseudocode are written to calculate retail shop billing.

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EX. NO.: 1(g) DATE:	SINE SERIES

AIM:

To draw flowchart & write algorithm for calculating sine series.

ALGORITHM:

Step 1: START

Step 2: Read x, n

Step 3: Set i=1, PI=3.142

Step 4: x = x*PF/180

Step 5: t=x

Step 6: Sum = x

Step 7: If i<=n go to step 8 else go to step 11

Step 8: t = (-t(x*x)) / 2*i(2*i+i)

Step 9: sum = sum=t

Step 10: Increment i by 1 go to step 7

Step 11: Print Sum

Step 12: STOP

PSUEDOCODE:

BEGIN

READ x, n

INITIALISE PI= 3.142

COMPUTE x=x*PI/180

COMPUTE t=x

COMPUTE Sum=x

FOR i=1 to n, then

CALCULATE t=(-t*(x*x))/2*i*(2*i+1)

COMPUTE Sum= sum+t

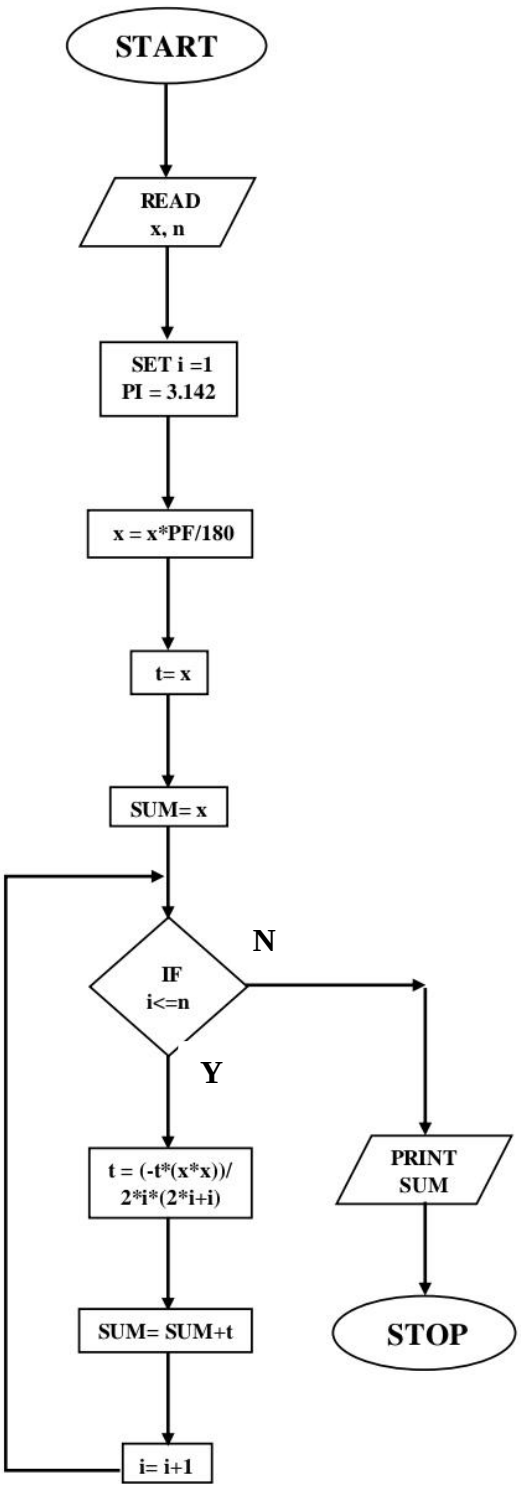
INCREMENT i by 1

END FOR

PRINT Sum

END

FLOWCHART:



RESULT:

Thus, the flowchart is drawn & algorithm, pseudocode are written to calculate sine series.

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