4. a. Find out the maximum and minimum of four numbers using if-else

Aim: - To write a C program to find the maximum and minimum of four numbers using if-else.

Software used: - Turbo C.

Algorithm:-

Step1:-Start

Step2:- Read input values a, b, c, d

Step3:-Find maximum of four numbers a by using if(a>b&&a>c&&a>d)

Step4:-Display maximum a

Step5:- Find maximum of three numbers b by using if(b>c&&b>d)

Step6:-Display maximum b

Step7:- Find maximum of two numbers c by using if(c>d)

Step8:-Display maximum c

Step9:- Find maximum d

Step10:-Display maximum d

Step11:-Find minimum of four numbers a by using if(a<b&&a<c&&a<d)

Step12:-Display minimum a

Step13:- Find minimum of three numbers b by using if(b<c&&b<d)

Step14:-Display minimum b

Step15:- Find minimum of two numbers c by using if(c<d)

Step16:-Display minimum c

Step17:- Find minimum d

Step18:-Display minimum d

Step19:-Stop.

Theory: -

To find the maximum of four numbers using if else is as follows

if (a > b && a > c && a > d) then maximum number is a, else if (b > c && b > d) the maximum number is b, else if(c > d) the maximum number is c else the maximum number is d.

if (a < b && a < c && a < d) then minimum number is a, else if (b < c && b < d) the minimum number is b, else if(c < d) the minimum number is c else the minimum number is d.

Program:-

```
#include<stdio.h>
#include<conio.h>
void main( )
{
int a, b, c, d;
clrscr( );
printf("enter a, b, c, d : ");
scanf("%d%d%d%d",&a, &b, &c,&d);
if(a > b && a > c && a > d)
printf("maximum = %d ", a);
else if(b > c && b > d)
printf("maximum = %d ", b);
else if(c > d)
printf("maximum = %d ", c);
else
printf("maximum = %d ", d);
if(a < b && a < c && a < d)
printf("minimum = %d " , a);
else if( b < c && b < d)
printf("minimum = %d " , b);
else if(c < d)
printf("minimum = %d " , c);
else
printf("minimum = %d " , d);
getch( );
}
```

Flow Chart:-

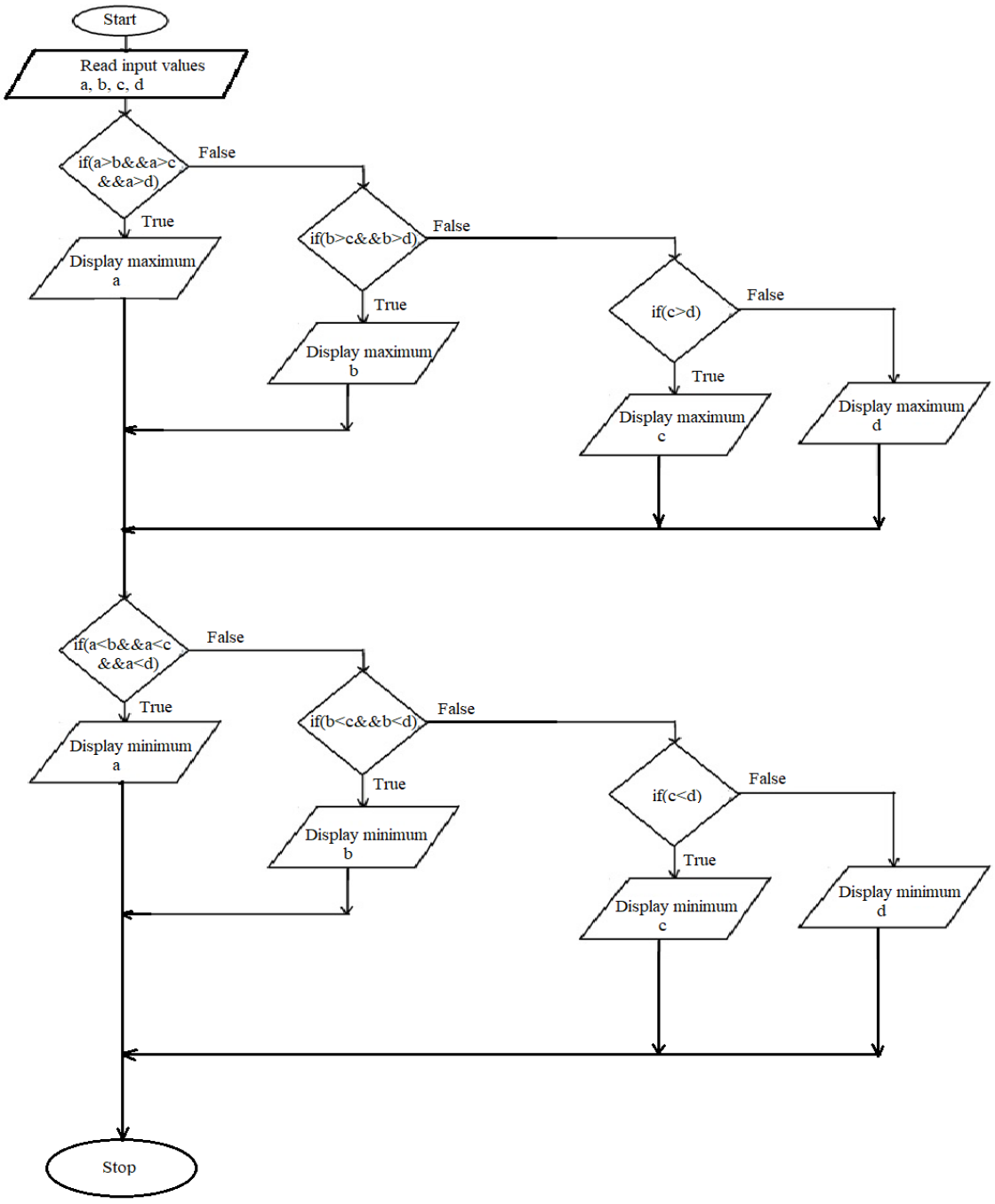

Fig: Flow Chart of maximum and minimum of four numbers

Output:-

enter a, b, c, d :

maximum =

minimum =

Result: - The maximum and minimum of four numbers is found by using a C program.

4. b. Program to calculate Electricity bill

Aim: - To write a C program to calculate Electricity bill.

Software used: - Turbo C.

Algorithm:-

Step1:-Start

Step2:- Read units and name

Step3:- Calculate amt = units*0.50 using if(units<=50)

Step4:- Calculate amt = 25+ ((units-50)*0.75) using else if(units<=150)

Step5:- Calculate amt = 100+ ((units-150)*1.20) using else if(units<=250)

Step6:- Calculate amt = 220+ ((units-250)*1.50) using else if(units<=250)

Step7:- Calculate sur_charge = amt*0.20

Step8:- Calculate total_amt = amt*sur_charge

Step9:- Display Name

Step10:-Display total_amt

Step11:-Stop

Theory:- The Electricity bill is calculated the total electricity bill according to the given condition:

For	first	50	units	Rs.	0.50/unit
For	next	100	units	Rs.	0.75/unit
For	next	100	units	Rs.	1.20/unit
For	unit	above	250	Rs.	1.50/unit

An additional surcharge of 20% is added to the bill.

Program:-

```
#include <stdio.h>
#include<conio.h>
void main()
{
   char name[ ] = "Raj";
   int units;
   float amt, total_amt, sur_charge;
   clrscr( );
   printf("Enter total units consumed: ");
   scanf("%d", &units);
   if(units <= 50)
   {
      amt = units * 0.50;
   }
   else if(units <= 150)
   {
      amt = 25 + ((units-50) * 0.75);
   }
   else if(units <= 250)
   {
      amt = 100 + ((units-150) * 1.20);
   }
   else
   {
      amt = 220 + ((units-250) * 1.50);
   }
   sur_charge = amt * 0.20;
   total_amt  = amt + sur_charge;
   printf("Name =  %s \n", name);
   printf("Electricity Bill = Rs. %.2f \n", total_amt);
   getch( );
   }
```

Flow Chart:-

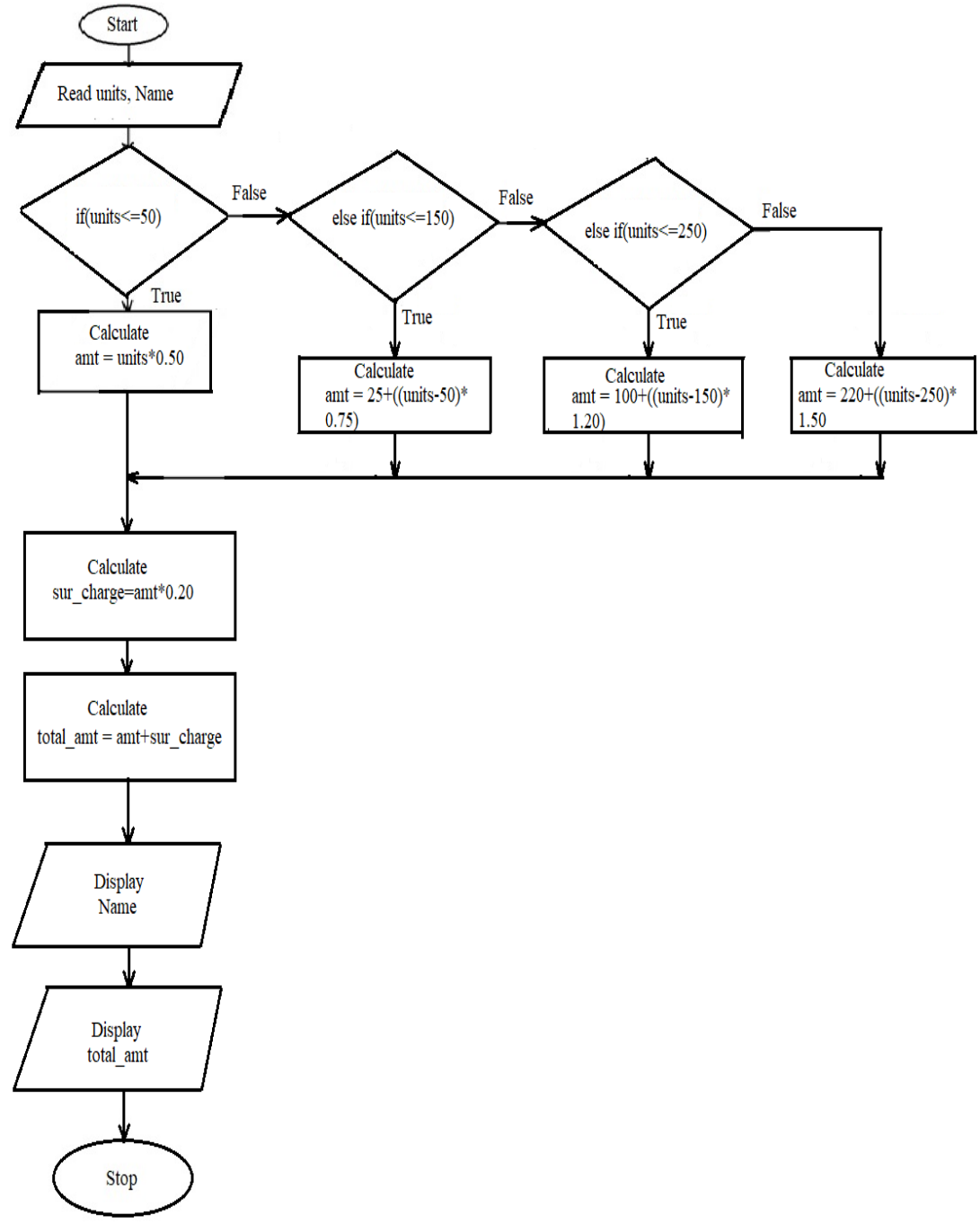

Fig: Flow Chart of calculation of Electricity bill

Output:-

Enter total units consumed:

Name=

Electricity Bill=

Result: - Calculation of Electricity bill is done by using a C program.

4. c. Program to find leap year or not

Aim: - To write a C program to find a given year is a leap year or not.

Software used: - Turbo C.

Algorithm:-

Step1:-Start

Step2:-Read year

Step3:-Find the leap year using if((year%4==0)&&(year%100!=0)||(year%100==0))

Step4:-Display Leap year

Step5:-Display Not a leap year

Step6:-Stop

Theory:-

The leap year is calculated by using if-else condition,

if((year%4==0)&&(year%100!=0)||(year%100==0)), if the condition is true leap year is printed else not a leap year is printed.

Program:-

```
#include <stdio.h>
#include<conio.h>
void main()
{
   int year;
   clrscr( );
   printf(" \n Enter any year: ");
   scanf("%d",&year);
   if((year % 4 == 0)&&(year%100 != 0)||(year%400 == 0))
   printf("\n Leap year");
   else
   printf("\n Not a leap year");
   getch( );
   }
```

Flow Chart:-

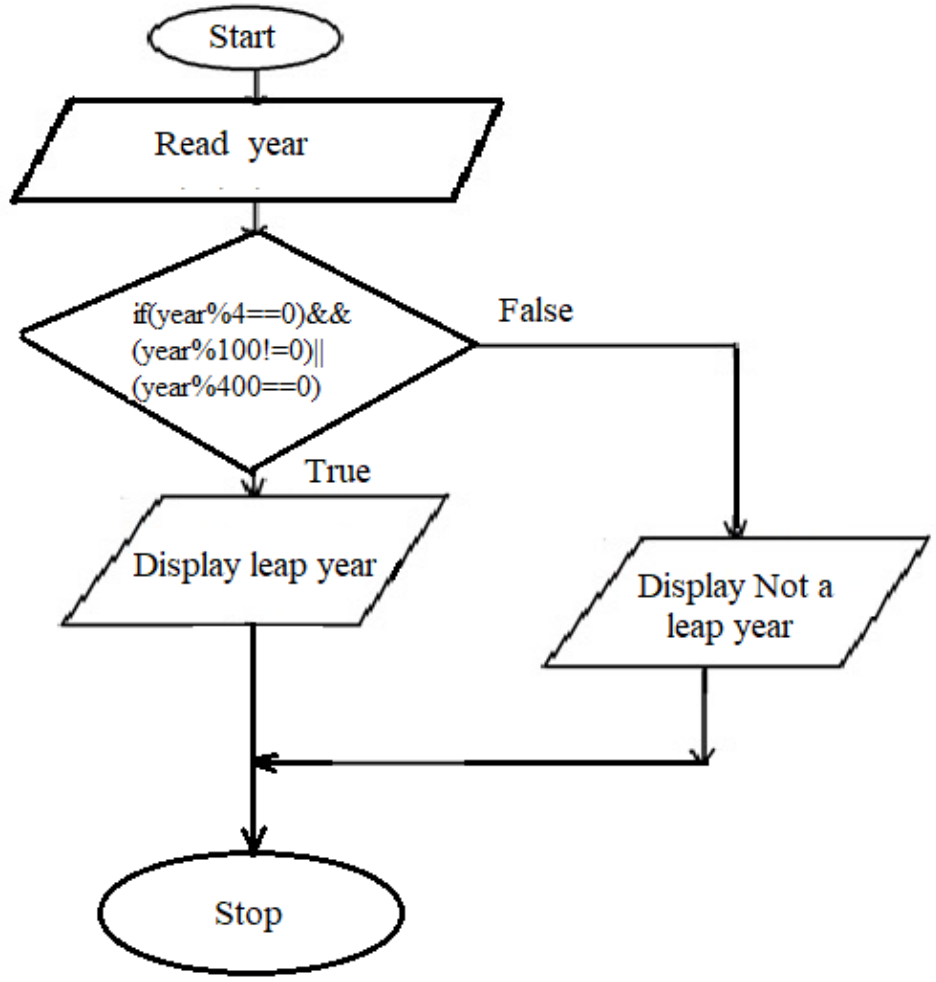

Fig: Flow Chart of Leap year or not using if-else

Output:-

Enter any year:

Result: - A C program is written to find a given year is leap year or not.