**EXPERIMENT NO:** 11

TITLE: Develop a program to sort the given set of N numbers using Bubble sort.

```
#include<stdio.h>
 void main()
{
        int n, i, j, temp, a[100];
        printf("Enter the value for n ");
        scanf("%d",&n);
        printf("Enter %d elements into array\n",n);
        for(i=0;i<n;i++)
        {
                scanf("%d",&a[i]);
        }
        printf("The unsorted array is\n");
        for(i=0;i<n;i++)
        {
                printf("%d\t",a[i]);
         }
        for(i=1;i<n;i++)
        {
                for(j=0;j<(n-i);j++)
                {
                        if(a[j]>a[j+1])
                          {
                                temp=a[j];
                                a[j]=a[j+1];
                                a[j+1]=temp;
                        }
                }
        }
        printf("\nThe sorted array is\n");
        for(i=0;i<n;i++)
        {
                printf("%d\t",a[i]);
        }
}
```

**OUTPUTS:**

- Enter the value for n
  5
  Enter 5 elements into array:
  5 1 4 2 8
  The unsorted array is:
  5 1 4 2 8
  The sorted array is:
  1 2 4 5 8

- Enter the value for n
  4
  Enter 4 elements into array
  -89
  95
  0
  -45
  The unsorted array is
  -89 95 0 -45
  The sorted array is
  -89 -45 0 95

**ALGORITHM:**

**STEP 1: START**

**STEP 2: READ** the number of elements **n**

**STEP 3: READ n** number of integer elements in to one-dimensional array **a[ ]**

```
for(i=0;i<n;i++)
{
    scanf("%d",&a[i]);
 }
```

**STEP 4: PRINT** the unsorted array **a[ ]**

```
for(i=0;i<n;i++)
{
    printf("%d\t",a[i]);
 }
```

**STEP 5: Sort the array a[ ] using bubble sort technique**

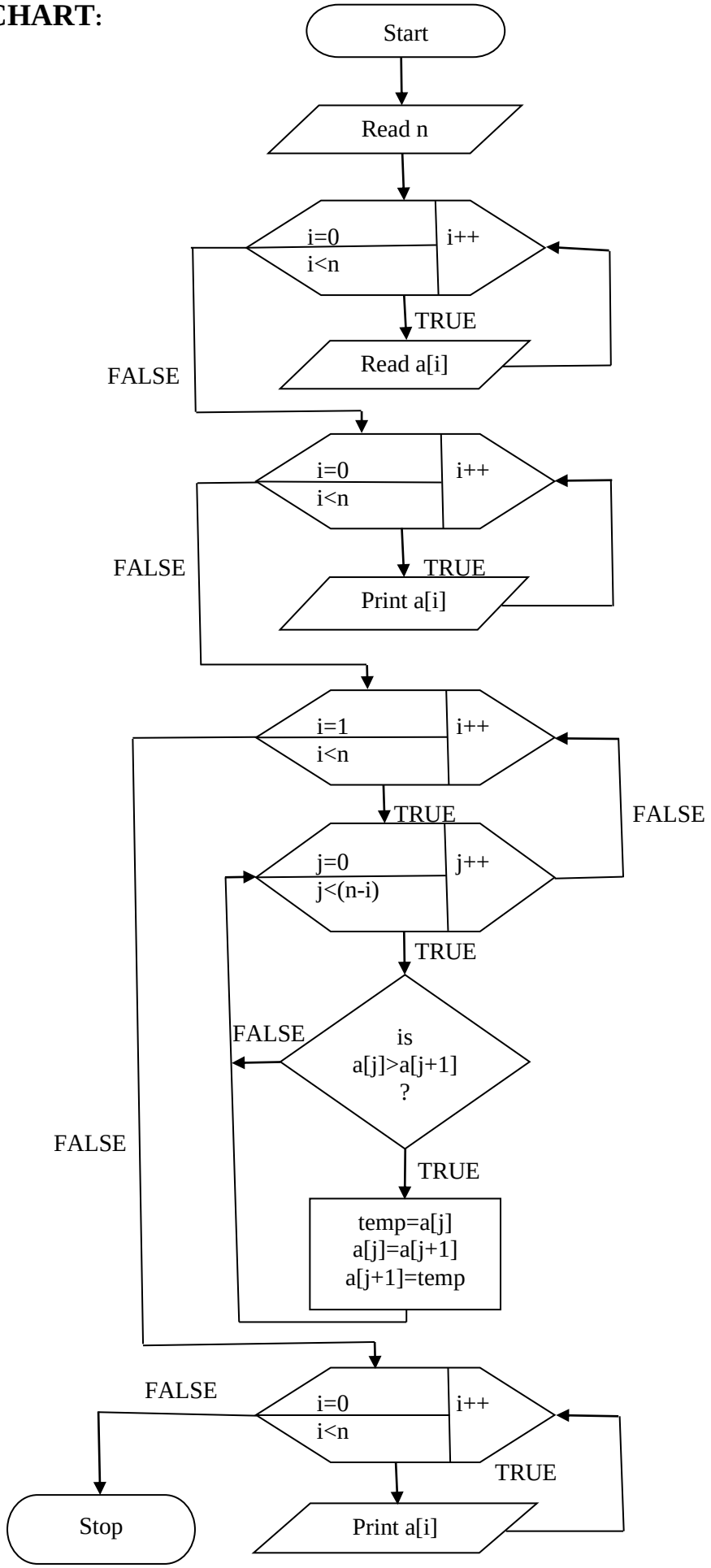
```
for(i=1;i<n;i++)
  {
      for(j=0;j<(n- i);j++)
      {
          if(a[j]>a[j+1])
          {
              temp=a[j];
              a[j]=a[j+1];
              a[j+1]=temp;
          }
      }
  }
```

**STEP 6: PRINT** the sorted array **a[ ]**

```
for(i=0;i<n;i++)
{
    printf("%d\t",a[i]);
 }
```

**STEP 7: STOP**

**FLOWCHART:**


Start
Read n
i=0
i<n
i++
TRUE
Read a[i]
FALSE
i=0
i<n
i++
FALSE
TRUE
Print a[i]
i=1
i<n
i++
TRUE
FALSE
j=0
j<(n-i)
j++
TRUE
FALSE
is
a[j]>a[j+1]
?
FALSE
TRUE
temp=a[j]
a[j]=a[j+1]
a[j+1]=temp
FALSE
i=0
i<n
i++
TRUE
Stop
Print a[i]