PROGRAM 17:

MERGE SORT:

#include<stdio.h>

void merge\_Sort(int [], int, int, int);

void partition(int [],int, int);

main()

{

int a[50] , i, n;

printf("Enter total number of elements:");

scanf("%d", &n);

printf("Enter the elements:\n");

for(i = 0; i < n; i++)

scanf("%d", &a[i]);

partition( a, 0, n - 1);

printf("After merge sort:\n");

for(i = 0;i < n; i++)

printf("%d\t", a[i]);

}

void partition(int a[],int low,int high)

{

int mid;

if(low < high)

{

mid = (low + high)/2;

partition( a, low, mid);

partition(a, mid+1, high);

merge\_Sort(a, low, mid, high);

}

}

void merge\_Sort(int a[], int low, int mid, int high)

{

int i, j, k, lo, temp[50];

lo = low;

i = low;

j = mid + 1;

while ((lo <= mid) && (j <= high))

{

if (a[lo] <= a[j])

{

temp[i] = a[lo];

lo++;

}

else

{

temp[i] = a[j];

j++;

}

i++;

}

if (lo > mid)

{

for (k = j; k <= high; k++)

{

temp[i] = a[k];

i++;

}

}

else

{

for (k = lo; k <= mid; k++)

{

temp[i] = a[k];

i++;

}

}

for (k = low; k <= high; k++)

a[k] = temp[k];

}

OUTPUT:

