**Write a program to perform heap sort.**

CODE-

#include <stdio.h>

#include <stdlib.h>

void swap(int \*a, int \*b)

{

int temp;

temp = \*a;

\*a=\*b;

\*b = temp;

}

void max\_heapify(int a[], int n,int i)

{

int largest =i;

int l = 2\*i+1;

int r = 2\*i+2;

if(l<n && a[l]>a[largest])

{

largest = l;

}

if(r <n && a[r] > a[largest] )

{

largest =r;

}

if(largest!=i)

{

swap(&a[i],&a[largest]);

max\_heapify(a,n,largest);

}

}

void heapsort(int a[], int n)

{

int i;

for(i= (n/2)-1;i>=0;i--)

{

max\_heapify(a,n,i);

}

for(i=n-1;i>=0;i--)

{

swap(&a[0], &a[i]);

max\_heapify(a,i,0);

}

}

void printarray(int a[], int n)

{

int i;

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

{

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

}

}

int main()

{

int n,a[1000],i;

printf("Enter the arrray size: ");

scanf("%d",&n);

printf("Enter the array elements: ");

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

{

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

}

heapsort(a,n);

printarray(a,n);

return 0;

}

Output-

