****

10. Develop a C program to simulate SCAN disk scheduling algorithm.

****

```
#include<stdio.h>
int main()
{
        int queue[20],n,head,i,j,k,seek=0,max,diff,temp,pos,queue1[20],queue2[20],
        r=0,l=0;
        printf("Enter the max range of disk\n");
        scanf("%d",&max);
        printf("Enter the initial head position\n");
        scanf("%d",&head);
        printf("Enter the size of queue request\n");
        scanf("%d",&n);
        printf("Enter the queue of disk positions to be read\n");
        for(i=1;i<=n;i++)
        {
                scanf("%d",&pos);
                if(pos>=head)
                {
                        queue1[r]=pos;
                        r++;
                }
                else
                {
                        queue2[l]=pos;
                        l++;
                }
        }
        for(i=0;i<r-1;i++)
        {
                for(j=i+1;j<r;j++)
                {
                        if(queue1[i]>queue1[j])
                        {
                                temp=queue1[i];
```

```
                        queue1[i]=queue1[j];
                        queue1[j]=temp;
                    }
                }
            }
            for(i=0;i<l-1;i++)
            {
                for(j=i+1;j<l;j++)
                {
                    if(queue2[i]<queue2[j])
                    {
                        temp=queue2[i];
                        queue2[i]=queue2[j];
                        queue2[j]=temp;
                    }
                }
            }
            for(i=1,j=0;j<r;i++,j++)
            queue[i]=queue1[j];
            queue[i]=max;
            for(i=r+2,j=0;j<l;i++,j++)
            queue[i]=queue2[j];
            queue[0]=head;
            for(j=0;j<=n;j++)
            {
                diff=abs(queue[j+1]-queue[j]);
                seek+=diff;
                printf("Disk head moves from %d to %d with seek
%d\n",queue[j],queue[j+1],diff);
            }
            printf("Total seek time is %d\n",seek);
            return 0;
}
```