**Question 1**

Consider the selection sort algorithm given below. Selection sort algorithm sorts n numbers stored in array A by first finding the smallest element of A and exchanging it with the element in A[1]. Then find the second smallest element of A, and exchange it with A[2]. Continue in this manner for the first n - 1 elements of A.

**SELECTION-SORT*(A)***

* + 1. *n* = A.*length*
    2. for *j* = 1 to *n* − 1
    3. *smallest* = *j*
    4. for *i* = *j* + 1 to *n*
    5. if *A*[*i* ] *< A*[*smallest*]
    6. *smallest* = *i*
    7. exchange *A*[ *j* ] with *A*[*smallest*]

Write a program to sort a set of numbers using selection sort algorithm

**Question 2**

* 1. Write a program to read a set of numbers and store them on an array.
  2. Write function named as partition to divide the array into two parts according to the partition point.

**PARTITION(*A*, *p*, *r*)**

1 *x* = *A*[*r*]

2 *i* = *p* - 1

3 **for** *j* = *p* **to** *r* - 1

4 **if** *A*[*j*] ≤ *x*

5 **then** *i* = *i* + 1

6 exchange *A*[*i*] wih *A*[*j*]

7 exchange *A*[*i* + 1] with *A*[*r*]

8 **return** *i* + 1

* 1. Call the function from the main program and display the array.
  2. Modify the program to sort the elements of the array using quick sort algorithm.

**QUICKSORT** (A,*p,r*)

* + 1. **if** p < r
    2. q = **PARTITION**(A,*p,r*)
    3. **QUICKSORT** (A,*p,q*-1)
    4. **QUICKSORT** (A,*q+1,r*)