**Lab-2 Assignments**

**2.1** WAP to create a 1-D array of n elements and perform the following menu based operations using function.

a. insert a given element at specific position.

b. delete an element from a specific position of the array.

c. linear search to search an element

d. traversal of the array

**Sample Input/Output:**

Enter size n : 5

Enter element of array:

Enter Array elements: 10 23 45 37 52

\*\*\*MENU\*\*\*

1. Insert

2. Delete

3. Linear Search

4. Traverse

5. Exit

Enter option: 1

Element to insert: 61 Enter Position: 2

Element inserted

Enter option: 4

Array Elements: 10 23 61 45 37 52

**Note: Other menu choices are similarly needs to verify.**

**2.2** Write a program to perform the following operations on a given square matrix using functions:

i. Find the no.of nonzero elements

ii. Display upper triangular matrix

iii. Display the elements of just above and below the main diagonal

**Sample Input:**

Enter size of the square matrix: 4

Enter elements of the matrix:

8 2 1 0

1 0 7 6

0 6 2 4

3 9 5 0

**Sample Output:**

Nonzero elements : 12

Upper triangular matrix:

2 1 0

7 6

4

P.T.O.

**2.3** WAP to represent a given sparse matrix in 3-tuple format using 2-D array.

**Sample Input:**

Enter size of the sparse matrix: 4 5

Enter elements of sparse matrix: 0 0 33 0 0 0 17 0 0 0 0 0 0 46 0 0 0 0 0 51

**Sample Output:**

sparse matrix in 3-tuple format

4 5 4

0 2 33

1 1 17

2 3 46

3 4 51