Data Structure Lab Syllabus

1) Write a C program for finding the mean, median, mode and standard deviation using an array.
2) Write a C program to implement two stacks using a single 1 D array where the total size of both stacks are fixed but the individual sizes may differ (use dynamic memory allocation and structure concepts).
3) Write a C program that uses stack operations to convert a given infix expression into its postfix equivalent, Implement the stack using an array.
4) Write a C program that uses functions to perform the following:
   a) Create a singly linked list of integers.
   b) Delete a given integer from the above linked list.
   c) Display the contents of the above list after deletion.
5) Write a C program to implement a double ended queue ADT using :
   a) Array and b) Doubly linked list respectively.
6) Write C program that uses functions to perform the following:
   a) Create a binary search tree of characters.
   b) Traverse the above Binary search tree recursively in Postorder, Preorder and Inorder.
7) Write a C program to implement Priority Queue using binary heap.
8) Write a C program to check whether that two tress are symmetric or not and also find that given tree is BST or not.
9) Write a C program to implement all the functions of a dictionary (ADT) using hashing.
10) Write a C program to implement the following graph traversal algorithms:
    a)Depth first traversal b) Breadth first traversal c) Topological Sort on DAG using DFS.
11) Write a C program to read integers from a user defined external file ,sort the integers using Merge Sort, Quick Sort and Insertion Sort and finally store the sorted numbers in another external file.
12) Write a C program to implement hashing where any collision is resolved by linear probing, quadratic probing and chaining.