**Practical File**

**DS LAB**

**(BCA-174)**

Submitted in partial fulfilment of the requirements for the

award of the degree of

**Bachelor of Computer Applications**

**Guru Gobind Singh Indraprastha University, Delhi**

Submitted to: Submitted by:

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| **Practical**  **No.** | **Problem Statement** | **Date Of Completion** | **Signature** |
| **1** | **Write a program to implement one-dimensional array**  **i) Insertion**  **ii) Deletion**  **iii) Traversal**  **iv) Reverse**  **v) Merge** |  |  |
| **2** | **Write a Program to perform operations on matrix like addition, subtraction, and multiplication** |  |  |
| **3** | **Write a program to accept matrix from user and find out whether the matrix is sparse or not.** |  |  |
| **4** | **Write a program to create a sparse matrix** |  |  |
| **5** | **Write a Program to perform Linear search in an unsorted array.** |  |  |
| **6** | **Write a Program to perform Linear search in a sorted array.** |  |  |
| **7** | **Write a Program to perform Binary search in a sorted array.** |  |  |
| **8** | **Write a Program to perform Bubble and Insertion sort.** |  |  |
| **9** | **Write a Program to perform Selection sort and Merge sort** |  |  |
| **10** | **Write a Program to perform insertion (Beg,Pos,end), deletion (Beg,Pos,End) and traversing on linear linked list.** |  |  |
| **11** | **Write a Program to implement student record which contains student name, roll no., average marks using Singly linked list** |  |  |
| **12** | **Write a program to create two Linked lists from a given list in following way. Input List:-1 2 3 4 5 6 7 8 9 10**  **O/p-first list -1 3 5 7 9**  **Second list :-2 4 6 8 10** |  |  |
| **13** | **Write a Menu Driven program to implement searching , sorting and Reversing in Linear Linked List** |  |  |
| **14** | **Write a Program to implement circular linked list and perform operations on it.** |  |  |
| **15** | **Write a Program to perform insertion and deletion on doubly linked list** |  |  |
| **16** | **Write a program that implements polynomial addition** |  |  |
| **17** | **Write a menu-driven program that implements static and dynamic stack** |  |  |
| **18** | **Write a Program to convert an Infix expression to Prefix form.** |  |  |
| **19** | **Write a Program to convert an Infix form to Postfix form** |  |  |
| **20** | **Write a Program to convert expression in postfix form to prefix form** |  |  |
| **21** | **Write a Program that implements static and dynamic Linear queue** |  |  |
| **22** | **Write a Program that implements static and dynamic Circular queue** |  |  |
| **23** | **Write a Program to create binary search tree and perform following operations:**   1. **Insertion** 2. **Deletion** 3. **Height of the tree** 4. **Searching**   **Display the binary tree in tree form** |  |  |
| **24** | **Write a Program to implement recursive algorithms for BST Traversal – Inorder, Preorder, and Postorder** |  |  |