2MCAP2: DATA AND FILE STRUCTURES LAB

Total No. of Hours: 72 **Hours/Week: 06**

Part – A	
1	Implement various operations on ordered & un-ordered arrays : (Creation, Insertion, Deletion)
2	Implement 2D array operations (Any two)
3	Implement various string operations using pointers : (Length, Concatenation, Substring, Find & Replace)
4	Implement various operations on singly linked list (Creation, Insertion, Traversal, Deletion)
5	Implement various operations on Doubly linked list (Creation, Insertion, Traversal, Deletion)
6	Implement various operations on Circular linked list (Creation, Insertion, Traversal, Deletion)
7	Create a double-ended queue (Dequeue) with the following operations: (a) insert in the Beginning (b) insert in the end (c) delete from beginning (d) delete from end
8	Implement stack operations using pointers (push, pop, process)
9	Implement various operations on queue using pointers (Insertion, Deletion, Process the Queue)
10	Implement circular queue
Part – B	
11	Implement sort algorithms(Insertion sort, Merge sort, Quick sort, Heap sort, Radix sort)
12	Implement search algorithms(Linear & Binary search)
13	Implement conversion of infix expression to its postfix form
14	Implement evaluation of postfix expression
15	Implement various operations on Binary trees (Creation, Insertion, Deletion, Process)
16	Implement Binary tree traversals (Pre-order, In-order, Post-order)
17	Code for finding a node in a binary search tree and displaying its level where it is found (root is at zero level)
18	Given the adjacency matrix generate a graph G
19	Perform Breadth-First- Search / Depth-First- Search traversal on a graph
20	Implement Shortest Path Algorithm (Traveling Salesman Problem)

Scheme of Evaluation

Sections	Criteria	Marks
Part A	Writing ONE program	10
	Execution of ONE program	15
Part B	Writing ONE program	10
	Execution of ONE program	15
	Enhancement	10
	Viva	10
Total		70