Ramdeobaba University, Nagpur
Department of Computer Science and Engineering & Emerging Technologies

Programme	**B. Tech. First Year**	**Year 2024-2025**
Semester	**II**	
Course Name	**Data Structures Lab**	**Code: 24CS01PR0202**
Course Coordinator(s):		

List of Experiments

Sr. No.	Aim / Problem Statement
1	Write a menu driven program to implement an Array ADT. (use structure for ADT implementation, ADT data includes pointer to array, maximum array size, length) a.Create an array (use malloc() for dynamic memory allocation) b.Append an element at the end c. Insert an element at given index or Insert an element in a sorted array d. Delete an element from the given index
2	a. Write a menu driven program to implement Stack ADT using array. b. Write a program using Stack ADT to convert an infix expression to postfix expression
3	Write a menu driven program to implement Circular Queue data structure.
4	Write a program to create a singly linked list and implement functions: a. insert an element – at the beginning, at the end and at a specified position in the list. b. delete an element from the beginning,end or a specified position at the list. (Implement any one operation: split a list to store even and odd elements in two separate lists/ merge two lists /search an element in a list).
5	Consider a polynomial is stored in a linked list. Write a program to add the two polynomials and store the result in 3rd linked list. P1=$2x^2+3x+4$ P2=$3x^5+2x^2+3$ Result should be:- P3=$3x^5+4x^2+3x+7$
6	Write a program to create a BST and perform and the following operations: a. Inorder Traversal b. Preorder Traversal c. Postorder Traversal d. Count Number of leaf nodes e. Count Number of nodes
7	Write a program to reperesnt Graph in the form of adjacency Matrix. Perform the following operations on the graph: a. Breadth First Search b. Depth First Search c. Indegree of a node d. Outdegree of a node
8	Write a programto implement following sorting algorithms: a. Merge Sort b. Quick Sort