RAMAIAH Institute of Technology

Department of Computer Science & Engineering

Course Code:	**CSL36**	**TERM: Nov 2023 - Mar 2024**	
Course Name:	**Data Structures Laboratory**	**Faculty In-charge:**	**SB/ML/SJ**
Credits:	**0:0:1**	**Semester:**	**III**

Sl. No.	Questions	**CO**	**PO**
1.	Write and implement a C program to perform transpose of Sparse Matrix using a) Simple Transpose Method (15 marks) b) Fast Transpose Method (20 marks)	CO1	1,2 &3
2.	Write and implement a C program to perform Pattern Matching using. a) KMP pattern matching (20 marks) b) nfind matching (15 marks)	CO1	1,2 &3
3.	Write and implement a C program to convert the given Infix expression to Postfix expression using stack (35 Marks)	CO2	1,2 &3
4.	Write and implement a C program to perform Evaluation of Postfix expression using stack. (35 Marks)	CO2	1,2 &3
5.	Write and implement a C program to perform the following operations on a circular queue using dynamically allocated arrays. a) Insert an item into circular queue (15 marks) b) Delete an item from circular queue (10 marks) c) Display the circular queue contents (10 marks)	CO1&2	1,2 &3
6.	Write a C program to implement a following stack operations using linked lists. a) Push an item in stack (15 marks) b) Pop an item from stack (10 marks) c) Display stack contents (10 marks)	CO1&2	1,2 &3
7.	Write a C program to implement a following queue operations using linked lists a) Add an item in queue (15 marks)	CO2	1,2

	b) Delete an item from queue (10 marks) c) Display queue contents (10 marks)		&3
8.	Write and implement a C program to perform the following using linked lists. a) Create Linked lists to store two polynomials (20 marks) b) Add two polynomials (15 marks)	CO2	1,2 &3
9.	Write and implement a C program to perform following operations on doubly linked list. a) Insert a node/create a list (15 marks) b) Delete a node from a list (15 marks) c) Display the created list (5 marks)	CO2	1,2 &3
10.	Write and implement a C program for the following operations: a) Construct binary search tree. (20 marks) b) Binary search tree traversal using: (15 marks) i) In-order traversal ii) Pre-order traversal iii) Post-order traversal	CO2&3	1,2 &3
11.	Write a C program to implement the following max heap operations: a) Insert an item into heap (15 marks) b) Delete an item from heap (10 marks) c) Display heap contents (10 marks)	CO2&3	1,2 &3
12.	Write a C program to implement the following operations over Graph: a) Construct a Graph (15 marks) b) Depth First Search (10 marks) c) Breadth First Search (10 marks)	CO2&3	1,2 &3

Marks Distribution

Conduction and Result	Write-up	Execution	Viva	Change of Program
	8M	35M	7M	-8M

Course Co-ordinator **Reviewer** **HoD, Dept. of CSE**