SR 22

St. Peter's Engineering College (Autonomous) Dullapally (P), Medchal, Hyderabad – 500100. II - Mid Term Examination – JUNE 2024						Dept.	:	
						Academic Year 2023-24		
Subject Code	:	AS22-05ES07	Subject	:	DATA STRUCTURES			
Class/Section	:	B. Tech. (A)	Year	:	I	Semester	:	II
Duration	:	120 Min	Max. Marks	:	30	Date:	:	

BLOOMS LEVEL					
Remember	L1	Understand	L2	Apply	L3
Analyze	L4	Evaluate	L5	Create	L6

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PART – A (10x1M = 10M)

Note: Answer all Questions. Each Question carries equal marks.

Q. No	Question (s)	Marks	BL	CO
	UNIT - IV			
1	a) What are the pointers used in the Queue.	**1M**	L1	C123.4
	b) Write the conditions for circular queue full and empty?	**1M**	L1	C123.4
	c) List the differences between Stack and Queue	**1M**	L1	C123.4
	d) Name the polish notations with an example.	**1M**	L2	C123.4
	UNIT – V			
	e) List the traversal methods used in Binary Tree.	**1M**	L1	C123.5
	f) What are the techniques used in AVL tree to balance a node.	**1M**	L1	C123.5
	g) Compare BFS and DFS.	**1M**	L2	C123.5
	h) How to find the height and degree of a node in a tree.	**1M**	L1	C123.5
	UNIT – III			
	i) What is the difference between SLL and CLL.	**1M**	L1	C123.3
	j) Show the DLL implementation with four nodes	**1M**	L2	C123.3

PART – B (20M)

Q. No	Question (s)	Marks	BL	CO
	UNIT - IV			
2	a) Convert the infix expression into postfix expression using stack **K + L - M*N + (O^P) * W/U/V * T +Q**	**4M**	L3	C123.4
	b) Explain the operation of Circular Queue.	**4M**	L2	C123.4

OR				
3	a) Write a C program to implement stack operations using an array.	**8M**	L1	C123.4
UNIT – V				
4	a) Design AVL Tree for the numbers 1 to 8.	**4M**	L5	C123.5
	b) Construct a Binary Search Tree for the sequence of numbers 10,12,5,4,20,8,7,15 and 13	**4M**	L5	C123.5
OR				
5	a) Demonstrate DFS graph traversal algorithm.	**8M**	L2	C123.5
UNIT – III				
6	a) Analyze and Write a C program to add a node at middle in the DLL.	**4M**	L4	C123.3
OR				
7	a) Analyze and Write a C program to delete a last node in the CLL.	**4M**	L4	C123.3

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