

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

PART – A (10x1M = 10M)**Note: Answer all Questions. Each Question carries equal marks.**

Q. No	Question (s)	Marks	BL	CO
UNIT - IV				
1	a) Define Stack with an example	1M	L1	123.4
pg 12	b) Define enqueue () and dequeue () operation in Queue.	1M	L1	123.4
pg 12	c) How can you check the conditions when stack is full or empty?	1M	L2	123.4
pg 2	d) What are the operations of the stack?	1M	L1	123.4
UNIT – V				
	e) List the various operations in binary search tree.	1M	L2	123.5
pg 7	f) Define Leaf node and Internal Nodes?	1M	L1	123.5
	g) Write the balance factor formula for AVL tree.	1M	L2	123.5
pg 7	h) Define height and Depth of a node?	1M	L1	123.5
UNIT – III				
pg 7	i) Draw the diagram of circular linked list with four nodes.	1M	L1	123.3
	j) How can we say the list is empty in Singly Linked List?	1M	L1	123.3

PART – B (20M)

Q. No	Question (s)	Marks	BL	CO
UNIT - IV				
2	a) Explain about Polish Notations with their types.	4M	L3	123.2
	b) Explain the Process of Tower of Hanoi with example program.	4M	L2	123.3
OR				
3	Briefly discuss about the Implementation of Stack using Linked List with suitable Example.	8M	L3	123.3

UNIT – V				
4	a) Analyze the steps involved in the insertion operation of Binary Search Tree.	4M	L4	123.5
	b) Explain the concept of incidence matrix and adjacency list of graph representations data structure.	4M	L3	123.5
OR				
5	a) Discuss traversal methods in a Binary Tree with suitable examples.	8M	L3	123.4
UNIT – III				
6	a) Discuss the differences between a Singly Linked List and a Doubly Linked List	4M	L.	123.2
OR				
7	a) Differentiate between arrays and Linked Lists, highlighting their respective advantages and disadvantages	4M	L4	123.3
