St. Peter's Engineering College (Autonomous)	Dept.	:	CSE, CSM, EEE
Dullapally (P), Medchal, Hyderabad – 500100. I - Mid Term Examination – March 2024			Academic Year 2023-24

Subject Code	:	AS22-05ES07	**Subject**	:	Data Structures			
Class/Section	:	II ⁿᵈ semester	**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 – I			
1	a) Define linear Data structure.	**1M**	L1	C123.1
	b) What is time Complexity?	**1M**	L1	C123.1
	c) Define Omega Notation.	**1M**	L1	C123.1
	d) List types of Data structure.	**1M**	L1	C123.1
	UNIT – II			
	e) List any four Sorting techniques.	**1M**	L2	C123.4
	f) Define Traversal in array.	**1M**	L2	C123.3
	g) Name sorting techniques which uses Divide and Conquer.	**1M**	L4	C123.2
	h) Write the Worst-case time and space Complexity for Quick Sort.	**1M**	L3	C123.2
	UNIT – III			
	i) Define linked list.	**1M**	L1	C123.3
	j) Write Syntax for Node Creation in Linked List.	**1M**	L1	C123.3

PART – B (20M)

Q. No	Question (s)	Mark	BL	CO
	UNIT – I			
2	a) Explain in detail about Asymptotic Notations.	**4M**	**L3**	**C123.2**
	b) Define in detail Operations of Data Structure.	**4M**	**L4**	**C123.1**
	OR			

3	Define an Algorithm, Write Important categories of algorithm and Characteristics of an algorithm.	**8M**	**L2**	**C123.1**
	UNIT – II			
4	a) Write a program for Bubble Sort.	4M	L3	C123.2
	b) Define Insertion Sort in detail with example.	4M	L2	C123.2
	OR			
5	Explain the process of Quick Sort with an example and mention its time and space complexity for all cases.	8M	L4	C123.3
	UNIT – III			
6	Explain Linked List with the types in detail also write uses of Linked List.	**4M**	L2	C123.3
	OR			
7	Write a program for inserting node in single linked list at the beginning.	**4M**	L3	C123.3

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