O.P.Code:	24mca110	Regulation2022	H.T.No.										

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)

MCA I Year II Semester Regular & Supplementary Examinations June/July-2025
DATASTRUCTURES

Time: 3 Hours　　　　　　　　　　　　　　　　　　　　　　　　　　　　**Max. Marks: 60**

(Answer all Five Units 5 x 12 = 60 Marks)

UNIT-1

1. Discuss about Asymptotic Notations with their types.　　　　　　　　　　　[12M]
(AUTONOMOUS)

OR

2. a) What is an Algorithm? Explain its specifications.　　　　　　　　　　　[6M]
b) What are the steps required to find sum of two numbers.　　　　　　　　[6M]

UNIT-2

3. Develop Circularly Linked List with various operations.　　　　　　　　　[12M]

OR

4. Develop various stack operations using arrays. With example　　　　　　[12M]

UNIT-3

5. Identify the following terms from the given tree
i) Internal Nodes
ii) External Nodes
iii) Depth
iv) Height
v) Level

　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　[12M]

OR

6. a) Analyze the steps to insert elements into Binary Search Tree.　　　　[6M]
b) Analyze the steps to search element in Binary Search Tree.　　　　　　[6M]

UNIT-4

7. Explain about Hashing with an example.　　　　　　　　　　　　　　　　[12M]

OR

8. a) What do you mean by searching? What are the types of searching?   [6M]

b) Differentiate various searching techniques.   [6M]

UNIT-5

9. a) Discuss how to represent Graph storage using Adjacency matrix.   [7M]

b) Briefly explain about Adjacency List with example.   [5M]

OR

10. a) Discuss DFS Graph Traversal with an algorithm.   [3M]

b) Explain DFS Graph traversal with steps for the following Graph .

[9M]