

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 $5 \times 12 = 60$ Marks)

UNIT-1

1. Analyze and write a program to store a set of values of same data type into a single variable. [12M]

OR

2. Explain the following i) Big -Oh ii) Big -Omega iii) Big -Theta [12M]

UNIT-2

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

OR

4. a) Convert the expression $(5 + 6) * (6 - 5)$ from infix to postfix [6M]
 b) Evaluate the postfix expression $25*423 -*+$. [6M]

UNIT-3

5. a) Explain BFS Tree Traversal with an example. [6M]
 b) Explain DFS Tree Traversal with an example. [6M]

OR

6. Describe different cases to delete an element in BST with an algorithm and examples. [12M]

UNIT-4

7. a) Explain Linear Search with an algorithm and example. [6M]
 b) Design a program to demonstrate Linear Search. [6M]

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. Discuss and compare various graph traversals.

[12M]

OR

10. Explain about shortest path problem with an algorithm and example.

[12M]