

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