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

OR

2. Discuss how you can measure Performance of an algorithm. [12 Marks]

UNIT-2

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

OR

4. a) What is a Stack? What are the operations that perform on a stack?
b) What is a Queue? What are the operations that perform on a Queue? [6 Marks]

UNIT-3

5. Develop B – Tree with various operations. [12 Marks]

OR

6. a) What are the different ways to define a tree?
b) Find various terminologies used in a tree. Explain any six terminologies [4 Marks]

UNIT-4

7. a) What do you mean by searching? What are the types of searching?
b) Differentiate various searching techniques. [6 Marks]

OR

8. Explain about Hashing with an example. [12 Marks]

UNIT-5

9. a) Discuss DFS Graph Traversal with an algorithm.
b) Explain DFS Graph traversal with steps for the following Graph . [3 Marks]

OR

10. Discuss and compare various graph traversals.
Prepared by:
Assistant Professor/ MCA [12 Marks]