

**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 2

CO1 L2 12M

**OR**

b) Differentiate linear and non -linear data structure . [L4][CO1 ] [6M]

CO1 L2 12M

**UNIT-2**

3 a) Convert the expression  $(5 + 6) * (6 - 5)$  from infix to postfix [L2][CO2 ] [6M] CO1 L2 12M**OR**

b) Design an algorithm to delete an element at end of circular ly linked list. [L3][CO2 ] [6M]

CO1 L2 12M

**UNIT-3**

5 a) Define binary tree and give the binary tree node structure. [L1][ CO3 ] [6M] CO1 L2 12M

**OR**

b) Analyze the steps to search element in Binary Search Tree. [L4][CO3 ] [6M] CO1 L2 12M

**UNIT-4**

7 b) Design a program to demonstrate selection sort. [L3][CO4 ] [7M] CO1 L2 12M

**OR**

a) Explain selection sort with an algorithm and example. [L2][CO4 ] [5M] CO1 L2 12M

**UNIT-5**

9 9 Explain in detail about various minimum cost spanning tree algorithms. [L2][CO5 ] [12M] CO1 L2 12M

**OR**

a) Discuss BFS Graph Traversal with an algorithm. [L2][CO5 ] [3M] CO1 L2 12M

**\*\*\* END \*\*\***