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

OR

2. a) Identify the steps to print the product of two numbers.
b) Identify the steps to display numbers from one to given number. [6 Marks]

UNIT-2

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

OR

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

UNIT-3

5. a) What is the various representation of a binary tree?
b) List out and explain various binary tree traversals. [6 Marks]

OR

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

UNIT-4

7. a) Explain Binary Search with an algorithm and example.
b) Develop a program to demonstrate Binary Search. [6 Marks]

OR

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

UNIT-5

9. Explain in detail about various minimum cost spanning tree algorithms. [12 Marks]

OR

10. Explain about shortest path problem with an algorithm and example. [12 Marks]