

**Reg. No:**

--	--	--	--	--	--	--	--	--	--

**SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR**  
(AUTONOMOUS)

**MCA I Year II Semester Regular Examinations October-2020**

## DATA STRUCTURES

Time: 3 hours

Max. Marks: 60

(Answer all Five Units 5 x 12 = 60 Marks)

### UNIT-I

- 1    **a** What do you mean by Asymptotic Notation? 6M  
       **b** Explain Big Oh Notation with example. 6M

**OR**

- 2    **a** Explain Omega Notation with example. 6M  
       **b** Explain Theta Notation with example. 6M

### UNIT-II

- 3    What is stack? Explain any two applications of stack with examples. 12M

**OR**

- 4    Give brief description about the priority queues. 12M

### UNIT-III

- 5    **a** Explain how to delete an element from the binary search tree. 6M  
       **b** Write recursive algorithm for pre order traversal. 6M

**OR**

- 6    **a** Discuss threaded binary trees. 6M  
       **b** Explain height balance tree. 6M

### UNIT-IV

- 7    What is searching? Explain Linear search algorithm with example and also find its time complexity. 12M

**OR**

- 8    Explain how to sort the elements by using insertion sort and derive time complexity for the same. 12M

### UNIT-V

- 9    Define graph. Explain various operations on graphs. 12M

**OR**

- 10    With an example discuss Warshall's algorithm. 12M

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