

Reg. No:

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

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

B.Tech I Year II Semester Supplementary Examinations February-2022

DATA STRUCTURES THROUGH C

(Common to CSE & CSIT)

Time: 3 hours

Max. Marks: 60

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

UNIT-I

- 1 a Discuss the following operations on One-Dimensional array with algorithms. 6M
(i) Merging (ii) Deletion
- b Discuss all types of Insertion operations on a S.L.L with algorithms. 6M

OR

- 2 a Explain and write the algorithms for Searching & Merging operations on C.L.L. 6M
b Write and explain the algorithm for Sorting operations on C.D.L.L. 6M

UNIT-II

- 3 a Write and explain the algorithm for Quick sort and apply the technique to sort the following elements: 34 71 26 14 81 54 49 6M
b Discuss the following representations of Stack 6M
(i) Stack using Arrays (ii) Stack using Linked Lists

OR

- 4 a Discuss the various operations on a Stack using Arrays. 6M
b Discuss the INSERT and DELETE operations of a Queue using array with algorithms. 6M

UNIT-III

- 5 a Discuss the insertion and deletion on a Binary Tree. 6M
b Write about Traversal Operations on a Binary Tree with algorithms. 6M

OR

- 6 a Write and explain the algorithm for Heap sort. 6M
b How to do Topological Sorting on a directed acyclic graph, explain with an example? 6M

UNIT-IV

- 7 a Discuss the following Sorting techniques with example 6M
(i) Straight Insertion Sort (ii) List Insertion Sort
b Write and explain the algorithm for Straight Selection Sort with an example? 6M

OR

- 8 a What is the logic behind Heap sort and sort the following elements: 6M
12 98 67 44 88 70
b Discuss the Bubble sort algorithm and sort the following elements using it: 6M
12 98 67 44 88 70

UNIT-V

- 9 a What is Hash table and explain any two Hash functions with an example? 6M
b What is collision resolution? Discuss the different techniques of it? 6M

OR

- 10 a Discuss the concept of hashing with an example? 6M
b What is the drawback of closed hashing? Discuss any two remedies for it? 6M

*** END ***