

LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034



B.Sc. & B.C.A. DEGREE EXAMINATION – COMPUTER SCIENCE & APPLICATIONS

THIRD SEMESTER – NOVEMBER 2019

16/17/18UCS3MC01 & 16/17/18UCA3MC03 – DATA STRUCTURES

Date: 29-10-2019

Dept. No.

Max. : 100 Marks

Time: 01:00-04:00

PART - A

Answer ALL the Questions

(10 * 2 = 20 Marks)

1. Define Data structures.
2. What are Multidimensional Arrays?
3. Define Recursion.
4. What is Queue?
5. Define Singly Linked List
6. Write the purpose of doubly linked list.
7. Define a Tree.
8. What is meant by preorder traversal?
9. What is merge sort?
10. What do you mean by binary search?

PART - B

Answer ALL the Questions

(5 * 8 = 40 Marks)

11. a. Explain the Data structures operations in Detail.
(OR)
b. Explain the traversing the linear arrays in memory
12. a. Explain in detail the Infix to postfix conversion with example.
(OR)
b. Explain in detail the Representations of queue.
13. a. Explain the representation of linked list in memory.
(OR)
b. Explain the insertion and deletion of nodes in Doubly linked list.
14. a. Explain the types of graphs with example.
(OR)
b. Explain in detail about Depth first search.
15. a. Explain the Insertion sort with example.
(OR)
b. Describe about the Bubble sort with example.

PART - C

Answer any TWO Questions

(2*20 = 40 Marks)

16. a. Explain about the control structures in detail.
- b. Discuss the Tower of Hanoi problem with example.
17. a. Explain the algorithm for traversing the linked list.
- b. Explain the types of Tree traversal with example.
18. a. Describe about the selection sort and merge sort with example.
- b. Explain in detail about the search technique.
