



LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

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

THIRD SEMESTER – NOVEMBER 2018

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

Date: 29-10-2018
Time: 01:00-04:00

Dept. No.

Max. : 100 Marks

SECTION - A

ANSWER ALL THE QUESTIONS:

(10 X 2 = 20)

1. What are the characteristics of a data structure?
2. How will you represent linear arrays in Memory?
3. What is reverse polish notation?
4. What are the operations on queue?
5. Define Linked List.
6. What is doubly linked list?
7. Define Multigraphs.
8. What is a path matrix?
9. What is sorting?
10. What are the different searching techniques?

SECTION - B

ANSWER ALL THE QUESTIONS:

(5 X 8 = 40)

11. (a) What are the various operations that can be performed on Data Structures?

(OR)

(b) Explain inserting and deleting in the linear arrays with an example.

12. (a) Describe the different operations on stack with an example.

(OR)

(b) Explain in detail about the evaluation of a postfix expression with an example.

13. (a) Discuss traversing and insertion into a linked list with an example.

(OR)

(b) Describe deletion algorithm used in a linked list with an example.

14. (a) Explain representation of binary trees in memory with an example.

(OR)

(b) Explain the concept of adjacency matrix and path matrix.

15. (a) Discuss insertion sort with an example.

(OR)

(b) Describe Binary search with an example.

SECTION-C

ANSWER ANY TWO QUESTIONS:

(2 X 20 = 40)

16. (a) Explain in detail about the pointers and representation of pointer arrays.

(b) Describe the Towers of Hanoi problem with an example.

17. (a) Discuss doubly linked lists and its operations with an example.

(b) What is graph Traversals? Explain Depth First Traversal and Breadth First Traversal with an example.

18. (a) Describe Preorder, Inorder, Post order traversal of a binary tree with an example.

(b) Explain merge sort algorithm with an example
