



QP CODE: 21002272



21002272

Reg No :

Name :

M Sc DEGREE (CSS) EXAMINATION, NOVEMBER 2021

First Semester

M.Sc.Computer Science (Data Analytics)

CORE - CA030104 - DATA STRUCTURE USING C

2019 ADMISSION ONWARDS

EDCC741E

Time: 3 Hours

Weightage: 30

Part A (Short Answer Questions)

*Answer any **eight** questions.*

Weight 1 each.

1. What is pointer in C programming? What are its benefits?
2. Explain asymptotic notation and types.
3. What are arrays ? Give the syntax to declare an array in C. How do you represent single dimensional arrays in memory?
4. Explain the importance of Priority Queues.
5. Write the algorithm to delete a node at specific position in the doubly linked list.
6. How dynamic storage management is implemented?
7. Explain Linked representation of binary trees..
8. What are the different rotation done in AVL tree ?
9. What is the purpose of Dijkstra's algorithm.Explain the algorithm.
10. Write down the steps in DFS.

(8×1=8 weightage)

Part B (Short Essay/Problems)

*Answer any **six** questions.*

Weight 2 each.

11. Give a note on malloc(),calloc(),free() and realloc().
12. Write a program to generate Fibonacci series using recursive functions.
13. Explain the operations performed on Stack in detail. Write a program to implement these stack operations.
14. How does a selection sort work for an array?





15. Write the programs to delete the first and last node in a circular linked list.
16. Discuss the need of compaction and garbage collection.
17. How can we insert and delete a node in a binary tree?
18. Define collision. Explain the methods for handling collision.

(6×2=12 weightage)

Part C (Essay Type Questions)

*Answer any **two** questions.*

Weight 5 each.

19. Explain the working of a circular queue with an example.
20. How can you implement stack and queue using Linked list.
21. Construct binary search tree for the following values, a)52,78,34,12,49,100,3,27,16,56 b)D,B,E,A,F,C
c)43,10,79,90,12,54,11,9,50.
22. Discuss the Algorithm to find Minimum Spanning Tree .

(2×5=10 weightage)

