

Roll No.

Exam Code : M-19

Subject Code—8690

B. Sc. EXAMINATION

(Batch 2018 Onwards)

(Second Semester)

COMPUTER SCIENCE

CCsL-204

Data Structure Using 'C'

Note : Q. No. 1 is compulsory. Attempt *four* other questions selecting *one* question from each Unit. All questions carry equal marks.

1. (a) What do you understand by complexity ?
(b) Define Data Structure.
(c) What do you mean by Recursion ?
(d) What do you understand by ADT ?

- (e) Define De-queue.
- (f) Define the term-Height of a tree.
- (g) List various data structure operations.
- (h) What do you mean by the term 'Sorting' ?

$$2 \times 8 = 16$$

2. Write short notes on the following :

- (a) Classification of Data Structure
- (b) Sparse Matrices and its representation.

8+8=16

3. (a) Write an algorithm to convert given Infix expression to Postfix expression using stack.

- (b) Define an array and its types. Also, explain their representation into computer

8+8=16

Unit II

4. (a) Write a short note on Array v/s Linked List.
- (b) What is a Priority Queue ? What are its applications ? $8+8=16$
5. (a) Explain the linked list implementation of queue operations.
- (b) Write an algorithm to insert an element into circular queue. $8+8=16$

6. (a) Write short note on traversal of Binary trees.
- (b) Write a non-recursive implementation of pre-order traversal of Binary tree.

8+8=16

7. (a) Write short note on Binary Search Trees.
- (b) Explain DFS traversal algorithm for traversing a graph (with the help of an example).

8+8=16

Unit IV

8. (a) Write an algorithm for Bubble Sort.
(b) Write a short note on Binary Search.

9. Explain the quick sort technique in detail by using the list :

7, 15, 3, 14, 10, 1, 9, 8, 5, 2

16

8+8=16