FACULTY OF SCIENCE

B.SC III SEMESTER (CBCS R-19) EXAMINATIONS, DEC 2022

COMPUTER SCIENCE - III

DATA STRUCTURES USING C++

TIME: 3 HRS] [MAX. MARKS: 80

SECTION - A (8 X 4 = 32 Marks)

1 **Answer any EIGHT questions**

a Write Pseudo Code Conventions of an Algorithm.

b Discuss Infix to prefix conversion.

c How Stacks are used in executing Recursive Calls?

d Explain Iteration vs Recursion.

e Write applications of Queues.

f What is Sparse Matrix? How it is represented with Linked List?

g Explain Threaded Binary Tree. Write applications of Trees.

h Explain preconditions of Binary Search.

i Compare all sorting Methods.

j Explain construction of spanning tree.

k Write about Heap with applications.

l Write about Hash Table overflow.

SECTION – B (4 X 12 = 48 Marks)

Answer ALL questions

2 a What is Data Structure? Explain different types of Data structures.

OR

b Explain Sequential Organization of Stacks.

3 a What is Queue? Explain Queue ADT.

OR

b Explain Variants of Linked List.

4 a Explain Binary Tree Abstract Data Type.

OR

b Explain Insertion Sort with implementation.

5 a What is Graph? How they are represented? Explain.

OR

b Explain various Hash Functions.

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