Roll No. ....

OLE-3039

B. Tech. 3rd Semester (ECE) Examination – April, 2021

DATA STRUCTURES

Paper : PCC-CSE-221-G

Time : Three Hours]   *[Maximum Marks : 75*

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Question No. **1** is *compulsory*. Attempt *one* question from each section.

1. (a) How to design and develop algorithm in data structure ?   2.5

    (b) Explain various applications of stack.   2.5

    (c) How a memory is represented in data structure ?

                                                                    2.5

    (d) Explain the applications of binary tree.   2.5

(e) Write short note on sorting and hasing. 2.5

(f) What do you mean by Linked Lists. 2.5

UNIT – I

2. Explain in detail various Linear Search and Binary Search Techniques. 15

3. Explain with proper examples insertion, deletion and traversal algorithms Used in Data structures. 15

UNIT – II

4. Explain in detail with algorithms the operations of Simple Queue, Circular Queue and Priority Queue. 15

5. Write a short note on Expression Conversion and evaluation queue. 15

UNIT – III

6. (a) Discuss the Non-Sequential List Representation Singly linked lists. 8

(b) Explain in detail operations and algorithmic analysis of Doubly linked list. 7

7. Explain in detail Different types of Trees with their applications. 15

UNIT – IV

8. Describe the Objective and properties of Selection Sort, Bubble Sort, Insertion Sort algorithms.   15

9. Find out the Performance and Comparison of Quick Sort, Merge Sort and Heap Sort Algorithms.   15

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