LNCT UNIVERSITY
CS–205
Mid-Semester Examination-I (May-2025)
B.Tech. II Semester (CSE/CSE-AIML)
Data Structures and Algorithms (DSA)

__Duration:1hr 30min__   __Max.Marks:20__

Note: Attempt all questions.

Q1. A) What is a Array? Explain in brief various types of Array.

                                              [CO-1 / 5 Marks]

                        Or

B) Sort the following array using Shell Sort.
     34,19,9,4,29,27,12,20,15,10.   **[CO-1/ 5 Marks]**

Q2. A) What is a Data Structure? Describe the type of Data Structure?

                                              [CO-1 / 5 Marks]

                        Or

B) Given   an   array, **arr[-1.........15][-5.........16]** with   base value **110** and the size of each element is **4 Byte** in memory. Find the address of **arr[9][3]** with the help of Column-major order And Row major order ..

                                              [CO-1 / 5 Marks]

Q3. A) What are the basic operations performed on a stack?

                                              [CO-2 / 5 Marks]

                        Or

B) Sort the following array using Merge Sort And Quick Sort ?
     42,201,205,82,92,14,48,4,1   **[CO-2 / 5 Marks]**

Q4. A) Explain the Tower of Hanoi problem for 3 disks using recursion.

                                              [CO-2 / 5 Marks]

                    Or
B) Infix to postfix conversion.   **[CO-2 / 5 Marks]**

a) (A+((B-C)*(D-C)+F)/G)&(H-J)

b) AX*((BY$C)-(D&F)/H)^EX/PY