**KRISHNA ENGINEERING COLLEGE** 

(Approved by AICTE & Affiliated to Dr. APJ Abdul Kalam Technical University (Formerly UPTU), Lucknow) **Department of**

**Computer Science and Engineering (Artificial Intelligence) Data Structure using C Lab (KCS351)**

**Exercise-3: Write C Programs to illustrate the concept of Sparse Matrices. List of Experiments**

1. WAP in C to check whether a given matrix is a sparse matrix or not. (If the number of zeros' is greater than 50% of the total elements, then the matrix can be called sparse matrix.) 2. WAP in C to represent a sparse matrix using 2D array in which there are three rows named as *Row: Index of row, where non-zero element is located*

*Column: Index of column, where non-zero element is located*

*Value: Value of the non-zero element located at index – (row, column)*

**3.** WAP in C to represent a sparse matrix using structure in C.

**4.** WAP in C to represent a sparse matrix using Linked List. (after LL implementation) **5.** WAP in C to transpose a given sparse matrix.

**6.** WAP in C for multiplication of two sparse matrices.