## B.Sc(H) Computer Science (III Semester)

## Data Structure (50 marks)

## Unique Paper Code:32341301

**Ques 1** Write a function in C++ to sort a singly linked list? (6)

**Ques2** Write a function to delete an element with a value X from a doubly linked list? (6)

**Ques 3** Differentiate between an array and array list? (3)

**Ques 4** Write a function to insert a node with value X to the left of a node having value M in a doubly linked list? (6)

**Ques 5** What is static data members. Write a program to keep track of the no of objects existing in a particular class? (4)

**Ques 6** Consider the following stream of data

A    D  B       C    A    D  C       A    C    C    B    E    E

Show how the linked list is organized if move to front technique is used to search for an element. What is the no of comparisons performed to organize the list (4)

**Ques 7** Give the class definition of the singly linked list and then write the member function to find the largest element in the list ? (2+3)

**Ques 8** Give the array implementation of a linear queue. What are its disadvantages? How can it be improved? (7)

**Ques 9** Compare generic function with function overloading. Give example where function overloading should be used instead of generic function? (5)

**Ques 10** Check recursively whether a given word is a palindrome or not (4)