**PSG COLLEGE OF TECHNOLOGY, COIMBATORE-04**

**DEPARTMENT OF APPLIED MATHEMATICS AND COMPUTATIONAL SCIENCES**

**II Semester MSc Software Systems**

**18XW26 Data Structures Lab**

**Data Structures Lab –Linked List**

**Problem sheet - 8**

1. Write an algorithm to perform each of the following operations and implement each algorithm using C/C++.
2. Append an element to the end of a list
3. Concatenate two lists
4. Free all the nodes in a list
5. Reverse a list, so that the last element becomes the first, and so on.
6. Delete the last element from a list
7. Delete the nth element from a list
8. Combine two ordered lists into a single ordered list
9. Form a list containing the union of the elements of two lists
10. Form a list containing the intersection of the elements of two lists
11. Insert an element after the nth element of a list
12. Delete every second element from a list
13. Place the elements of a list in increasing order
14. Return the sum of the integers in a list
15. Return the number of elements in a list
16. Move node(p) forward n positions in a list
17. Make a second copy of a list
18. Write algorithms to perform each of the operations Question 1, assuming that each list contains a header node containing the number of elements in the list.
19. Page number: 219, ex. 4.3.1. to 4.3.3 and 4.3.5. (Data structures using C and C++ by Aaron M Tenenbaum)