**DATA STRUCTURES MAN 106**

**Practical 5 Spring Semester 2020-21**

1. Suggest a linked list representation for a polynomial in x:

P (x) = 10 x3 + 5 x 2 + 20 x - 4

(i) Write an algorithm to multiply the given polynomial by a x**b** and store the result at the same place.

(ii) Write an algorithm to add two given polynomials.

2. Define a class Deque ( also known as double ended queue) of integers as singly linked list. Include the operations create, isEmpty, addLeft, addRight, deleteLeft and deleteRight. Test the class in main.

3. Suggest data structure in non-contiguous memory for priority queues. Include functions addP( ) and removeP ( ) to add or remove an item of given priority from the priority queue.

4. For a doubly linked list, write algorithm for

(i) inserting a node on the left of a given node with address p

(ii) returns the address of nth node from the last node in the list.

(iii) searching an information x in the list. If the item is present, then delete it.