Shri G S Institute of Technology & Science, Indore
CT 10702: Data Structures
Theory Assignment II

1 Write the application of linked list?

2 Explain the representation of following single variable polynomial using Linked List?
$$P(x) = 2x^8 - 5x^7 - 3x^2 + 4$$

3 Explain the following:
(a) DEQUES
(b) PRIORITY QUEUES
(c) Header Linked List

4 The STACK data structure is implemented using array as well as linked list?Explain which representation of STACK is better and why?

5 Consider the following STACK of characters where STACK is allocated $N = 8$ memory cells.
     STACK: A, C, D, F, K,__ ,__ , __
Describe the stack as the following operation take place:

(a) POP(STACK,ITEM)	(b) POP(STACK,ITEM)
(c) PUSH(STACK,L)	(d) PUSH(STACK,P)
(e) POP(STACK,ITEM)	(f) PUSH(STACK,R)
(g) PUSH(STACK,S)	(h) POP(STACK,ITEM)

The POP procedure always delete the TOP element and PUSH always adds the new element at TOP.
(i) Represent the stack using following procedure.
(ii) When will overflow occur.
(iii)When C will be deleted before D.