



**Note: Answer Four Question only**

Q1//

A) what do we mean by logical and physical view in data structure? (6 mks)

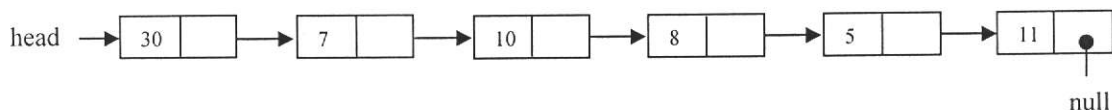
B) Explain how we can use stack to achieve the processing of procedures (Functions) calls in computer programming? (6.5 mks)

Q2//

A) Write an algorithm that reads in a string and prints its characters in reverse order [Note: the string terminator is a '.' which should not be printed as a part of the reversed string] (6.5 mks)

B) If you have a queue of integer values, write a C++ program to split the values of q1 into two queues one for even values and the other for odd values. (6 mks)

Q3// Given the following linked list: (12.5 mks)



Write a C++ program to perform the following steps in sequence

- 1- Create a linked list.
- 2- Delete all even numbers.
- 3- Add the elements 70, 80, 90, 100, before the last element in the list.

Q4//

A) What do we mean by Recursion and when we use recursion? (6 mks)

B) Write complete recursion program to perform the following steps in sequence (6.5 mks)

- 1- Read 10 integer values.
- 2- Split the positive and negative values.
- 3- Display the result.

Q5//

Draw the binary search tree for the following sequence of keys: (12.5 mks)

85, 10, 44, 25, 30, 8, 96, 70, 90, 33, 100

and perform the following operations in sequence

- 1- Insert 73, 18
- 2- delete 44, 8, 100
- 3- Write a function to find maximum and minimum number in a tree.