



भारतीय सूचना प्रौद्योगिकी संस्थान गुवाहाटी

INDIAN INSTITUTE OF INFORMATION TECHNOLOGY GUWAHATI

CS111 Data Structures Lab, MidSem Lab Test (Duration: 1 hour)

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1. Two linked lists of size ' $N$ ' and ' $M$ ' are provided as user input. The two linked lists represent two numbers. Write a C program to add the two numbers and store the result in a third linked list. Print the result linked list.

Example: Linked lists  $7 \rightarrow 5 \rightarrow NULL$  and  $5 \rightarrow 4 \rightarrow 3 \rightarrow NULL$  represent numbers 75 and 543. The sum 618 should be stored in a linked list as  $6 \rightarrow 1 \rightarrow 8 \rightarrow NULL$

[10]

2. Write a C program to rotate a singly linked list by ' $N$ ' nodes. The values to store in the linked list and ' $N$ ' are user inputs.

Example: Rotation on linked list  $3 \rightarrow 5 \rightarrow 7 \rightarrow 2 \rightarrow 9 \rightarrow NULL$  by 3 nodes should result in the linked list  $2 \rightarrow 9 \rightarrow 3 \rightarrow 5 \rightarrow 7 \rightarrow NULL$

[10]