BRAC University (Department of Computer Science and Engineering)

CSE 220 (Data Structures) for Fall 24

Quiz 2

Student ID: **Section:**   **Full Marks: 15**

Name: **Duration: 25 minutes**

---

1. Write a function that takes a **Singly Linked List** and **adds corresponding values from both ends of the list**. The function should return a new list where each element is the sum of the corresponding nodes from the front and back of the original list.. The Linked List contains integer numbers as elements.   10

   [For Simplicity, You can assume the Linked List has even number of elements]

Sample Input 1	Sample Output 1	Explanation
1 -> 2 -> 3 -> 4 -> 11 -> 9	10 -> 13 -> 7	(1 + 9) -> (2 + 11) -> (3 + 4)
Sample Input 2	**Sample Output 2**	**Explanation**
1 -> 2 -> 3 -> 1	2 -> 5	(1 + 1) -> (2 + 3)

2. If you were given a **Doubly Circular Linked List**, could you solve the above task (Q1) more efficiently (**Hint: Using only one loop**)? Explain your approach briefly with appropriate pseudo code or programmable code.   5