**Note:**

* This is a strictly individual work. Sharing the solution with each other will be considered as violation of the honor code and any suspicious activity may be referred to the disciplinary committee. In case of any help, please consult the instructor.
* You can’t use any built-in function to implement following tasks.

**Submission Deadline: 15 November 2020, 11:55 PM**

**Total Marks: 15**

**Write your answers in the below given tables.**

1. Indicate time complexities (in terms of Big-O notation) of all of the functions developed for Linked List, Stack and Queue

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Linked List** | **Add**  **At**  **Start** | **Add At Any Position** | **Add At End** | **Delete From Start** | **Delete from any position** | **Delete from End** | **Search an element in the linked list** | **Print the whole linked list** | **Reverse the Linked List** |
| **O(1)** | **O(n)** | **O(n)** | **O(1)** | **O(n)** | **O(n)** | **O(n)** | **O(n)** | **O(n)** |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Stack** | **Push** | **Pop** | **Peek** | **Size** | **Is Empty** | **Print Stack** |
| **O(1)** | **O(1)** | **O(1)** | **O(n)** | **O(1)** | **O(n)** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Queue** | **Enqueue** | **Dequeue** | **Size** | **isEmpty** | **PrintQueue** |
| **O(n)** | **O(1)** | **O(n)** | **O(1)** | **O(n)** |