

# India Institute of Information Technology Vadodara

## BTech (CS/IT): Semester II Introduction to Data Structure (CS102) Mid-Semester Exam (Marks: 10)

Time: 60 Minutes

---

Note:

1. All questions are compulsory. Answers must be written to the point.
2. Start each question on the new page.

### Questions

1. Suppose that a Stack is implemented using an Array so that the top element is always stored at index 0 of array. What are the advantages or disadvantages of this approach? (2)
2. The nodes in a LinkedStack hold a reference for next stack element, increasing the space needed to store data. Does this fact invalidate the claim that a LinkedStack uses space more efficiently than an ArrayStack? (2)
3. Write an algorithm for reversing a linked list. Give its time. (3)
4. Demonstrate how you will implement a Stack using two Queues. Illustrate push and pop operations with an example. (3)

----- Good Luck -----