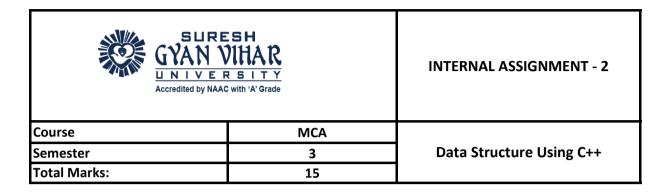


Q.1. Write answers for any two questions from below. (5 marks each – Word limit – 500)

- **A.** Define in brief an array. What are the types of array operations?
- B. Explain the terms: a. Data Types b. Derived Datatypes c. Data Object d. Abstract Data Type
- **C.** Does the Minimal Spanning tree of a graph give the shortest distance between any 2 specified nodes?
- Q.2. Write short notes on all of the following topics (1 mark each Word limit 100)
- **A.** Why we need to do algorithm analysis?
- **B.** What are asymptotic notations?
- **C.** Time Complexity
- **D.** What is the method to find the complexity of an algorithm? What is the use of space complexity and time complexity?
- E. Doubly Linked List



Q.1.	Write answers	for any two	questions f	rom bel	ow. (5 marl	ks each –	 Word limit 	- 500
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- **A.** What is Doubly Linked list? Implement Doubly Linked list with example.
- **B.** What is Single Linked list? Implement Single Linked list with example.
- **C.** Describe linked list using C++ with an example.

- Q.2. Write short notes on all of the following topics (1 mark each Word limit 100)
- **A.** What is a spanning tree?
- **B.** Explain Extended Binary tree. What is a Binary tree? How to implement binary tree in C? What is the difference between B tree and Binary search tree?
- **C.** Circular Linked List
- **D.** How is a bubble sort algorithm implemented?
- **E.** What is stack?