

# National University, Gazipur

B.Sc (Hons.) in CSE 2<sup>nd</sup> year, 3<sup>rd</sup> Semester, Examination 2023(New Syllabus).

Course Code: 520202 (Data Structure Lab)

Time- 3 hours

Full Marks- 40

*(Answer any two of the following problems)*

1. Write a program to search an element from an array using linear search algorithm.
2. Write a program to search an element from an array using binary search algorithm.
3. Write a program to calculate factorial of a number using recursion.
4. Write a program to implement Tower of Hanoi problem by using recursive function.
5. Write a program to replace a substring by another substring into a text.
6. Write a program to sort an array using bubble sort algorithm.
7. Write a program to sort an array using quick sort algorithm.
8. Write a program to implement all operations in an array (insertion and deletion).
9. Write a program to implement all operations in a linked list (insertion and deletion).
10. Write a program to implement all operations in stack (insertion and deletion).
11. Write a program to implement all operations in queue (insertion and deletion).
12. Write a program to traverse a binary tree in any order.

## Mark Distribution:

Algorithm	: 10
Source Code	: 10
Result	: 10
<u>Viva-voice</u>	: 10
Total	: 40