# National University, Gazipur

## B.Sc (Hons) in CSE
### 3rd Semester Examination, 2022
### Part-II, Session: 2020-2021
### Course Code: 520202 (Data Structure Lab)

Time-3 hours                                                                 Full Marks-40

*Answer any two of the following problems.*

1. Write a program to find the smallest and largest elements from an array.
2. Write a program to search an element from an array using linear search algorithm.
3. Write a program to search an element from an array using binary search algorithm.
4. Write a program to determine n fibonacci numbers using recursion.
5. Write a program to calculate factorial of a number using recursion.
6. Write a program to implement Tower of-Hanoi problem by using recursive function.
7. Write a program to replace a substring by another substring into a text.
8. Write a program to delete a substring from a text.
9. Write a program to sort an array using bubble sort algorithm.
10. Write a program to sort an array using quick sort algorithm.
11. Write a program to implement first pattern matching algorithm.
12. Write a program to implement all operations in an array ( insertion and deletion).
13. Write a program to implement all operations in a linked list( insertion and deletion).
14. Write a program to implement all operations in stack(insertion and deletion).
15. Write a program to implement all operations in queue(insertion and deletion).
16. Write a program to traverse a binary tree in any order.

## Mark Distribution :

|  |  |
|---|---|
| Algorithm | : 10 |
| Source Code | : 10 |
| Result | : 10 |
| Viva-voce | : 10 |
| TOTAL | : 40 |