



'समानो मन्त्रः समितिः समानी'

**UNIVERSITY OF NORTH BENGAL**

B.Sc. Honours 4th Semester Examination, 2022

**CC8-COMPUTER SCIENCE (CC-41L) (PRACTICAL)**

**DESIGN AND ANALYSIS OF ALGORITHM LAB**

Time Allotted: 2 Hours

Full Marks: 20

*The questions are of equal value.  
The figures in the margin indicate full marks.  
All symbols are of usual significance.*

<b>Program:</b>	<b>15</b>
<b>Viva:</b>	<b>5</b>
<b>Total</b>	<b>20</b>

**Answer any one question**

20×1 = 20

1. Write a program to implement Bubble Sort and determine the number of comparison required to sort the elements. 20
2. Write a program to implement Quick Sort and determine the number of comparison required to sort the elements. 20
3. Write a program to implement Heap Sort Algorithm. 20
4. Write a program to implement Merge Sort. 20
5. Write a program to implement Insertion Sort Algorithm and determine the number of comparison required to sort the elements. 20
6. Write a program to implement Radix Sort. 20
7. Write a program to implement Binary Search Algorithm. 20
8. Write a program to implement N-queen's problem using Backtracking. 20
9. Write a program to find minimum cost spanning tree of a given undirected graph using Prim's algorithm. 20

10. Write a program to create a Red-Black tree and perform following operation on it: 20
  - (i) Insert a node
  - (ii) Delete a node.
11. Write a program to implement stack operation. 20
12. Write a program to implement circular queue. 20
13. Write a program to implement infix to postfix conversion using stack. 20
14. Write a program to implement evaluation of postfix expression. 20
15. Write a program to implement singly linked list. 20

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