



'সমানো মন্ত্র: সমিতি: সমানী'

UNIVERSITY OF NORTH BENGAL

BCA Honours 3rd Semester Examination, 2022

CC5-BACHELOR OF COMPUTER APPLICATION (31)

DATA STRUCTURES

Time Allotted: 2 Hours

Full Marks: 40

The figures in the margin indicate full marks.

GROUP-A

Answer any five questions

1×5 = 5

1. What is sparse matrix?
2. What is the function of a stack?
3. Give an example of doubly linked list.
4. What is De-queue?
5. What is recursion?
6. What is the function of AVL tree?
7. What is hash table?
8. Why do we need binary search?

GROUP-B

Answer any three questions

5×3 = 15

9. Differentiate between single and multidimensional arrays.
10. Convert the following infix into postfix notation.
$$S = A * (B + C) - C(D * A/2)$$
11. Explain self organizing lists with the help of an example.
12. Explain internal stack implementation in recursion with the help of an example.
13. Write down the algorithm for linear search.

GROUP-C

Answer any *two* questions

10×2 = 20

14. Explain iterative traversal on binary search tree with the help of an example.
15. Compare and contrast different sorting techniques with the help of suitable example.
16. Explain the array and linked list representation of queue with the help of example.
17. Write down the algorithm for polynomial multiplication.

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