THIRD SEMESTER B.Sc. DEGREE EXAMINATION, NOVEMBER 2023

(Regular/Improvement/Supplementary)

COMPUTER SCIENCE

GBCS3B04T: DATA STRUCTURES USING C

Time: 2 Hours   **Maximum Marks: 60**

SECTION A: Answer the following questions. Each carries *two* marks.

(Ceiling 20 Marks)

1. Define time complexity of an algorithm.
2. Explain Big O notation.
3. Write about multidimensional arrays.
4. What ismeant by header linked list?
5. What do you mean by parallel arrays?
6. Write the algorithm for insertion operation in queue.
7. What do you mean by expression tree?
8. Explain in-order with example.
9. Differentiate between path and branch.
10. Define the terms*level* and*height* of tree.
11. Compare degree of node and degree of tree.
12. Write algorithm for linear search.

SECTION B: Answer the following questions. Each carries *five* marks.

(Ceiling 30 Marks)

13. Explain data structure operations.
14. List out any five operations of string.
15. Define sparse matrix. Discuss its representation.
16. Compare array and linked list.
17. Describe any two applications of queue in detail.
18. Delineate any two operations in binary search tree.
19. Explain BFS with example.

SECTION C: Answer any *one* question. Each carries *ten* marks.

20. What is stack? Explain its representation and operations detail.
21. Explain hashing in detail.

(1 x 10 = 10 Marks)