

B.SC(IT) SEMESTER - 2 (NEP-2020) Examination**MARCH/APRIL-2026****Data Structure using C (Theory) (Major-3)****Time: 2:00 Hours****Marks: 50****Instructions:**

1. All questions are compulsory.
 2. Figures to the right indicate marks.
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Que. 1 Answer following Questions: (Any Two) (10)

- 1) Explain characteristics of Data Structure.
- 2) Explain types of Data Structure.
- 3) What is searching? Explain binary search with example.
- 4) List out sorting methods. Explain Bubble sort with algorithm and program.

Que. 2 Answer following Questions: (Any Two) (10)

- 1) Write a menu driven program to implement stack with required operations.
- 2) Write a menu driven program to implement circular queue
- 3) Write short note on Polish Expressions & Reverse Polish Expressions.
- 4) Write a menu driven program to implement double ended queue

Que. 3 Answer following Questions: (Any Two) (10)

- 1) Write a program to insert as a first node, delete as a first node and display the nodes using singly linked list.
- 2) Write a program to implement stack using linked list.
- 3) Write a program to search data from singly linked list.
- 4) Write a program to implement doubly linked list.

Que. 4 Answer following Questions: (Any Two) (10)

- 1) Explain binary tree traversal. Write a function for inorder, preorder and postorder.
- 2) What is graph? Explain basic graph operations.
- 3) Explain BFS and DFS.
- 4) Explain Spanning Tree and shortest path.

Que. 5 Answer following Questions: (Any Two) (10)

- 1) What is file structure? Explain File and File System.
- 2) Explain File System Services.
- 3) What is FAT? Explain File Allocation Table.
- 4) Explain Tree structured directory structure.
