

B.SC(IT) SEMESTER - 2 (NEP-2020) Examination**JUNE – 2024****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) What is pointer? Explain pointer arithmetic.
- (2) Write an algorithm and a program for Quick Sort.
- (3) Write an algorithm and a program for Binary Search.
- (4) Explain difference between Bubble and Merge Sort.

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

- (1) What is Stack? Write a menu driven program which demonstrate operation of stack,
- (2) Explain Polish and Reverse Polish with example.
- (3) Write a menu driven program for Circular Queue.
- (4) Write a menu driven program for Double Ended Queue.

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

- (1) What is Singly Linked List?
Write a program to implement Singly linked list.
Write functions to insert and delete at a specific location and traverse a list.
- (2) What is Doubly Linked List?
Write a program to implement Double linked list.
Write functions for insertion, deletion and traversing a doubly linked list.
- (3) Write a program to implement stack using linked list.
- (4) Write a program to implement queue using linked list.

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

- (1) What is tree? Explain representation of Binary Tree.
- (2) Write a program to represent three binary tree traversal methods.
- (3) Write short note on Graph.
- (4) Explain BFS and DFS.

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

- (1) Explain File and File System. Explain File System Service.
- (2) Explain Disk Space Allocation.
- (3) Write short note on FAT.
- (4) Explain Tree structured directory system.
