

B.SC(IT) SEMESTER - 2 (NEP-2020) Examination**MARCH/APRIL-2025****Data Structure using C (Theory) (Major-3)****Time: 2.00 Hours****Mark: 50****Instructions:**

1. All questions are compulsory.
2. Figures to the right indicate marks.

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| Que.1 | Attempt following questions.(Attempt any Two) | (10) |
| | <ol style="list-style-type: none">1) What is Pointer? Explain Pointer Arithmetic with an example.2) What is Sort? Explain bubble sort with an example.3) Explain types of linear data structures in detail.4) Explain Binary Search with an example. | |
| Que.2 | Attempt following questions.(Attempt any Two) | (10) |
| | <ol style="list-style-type: none">1) Explain types of Operations perform on Stack.2) Write short note on Circular Queue.3) Explain applications of Stack in detail.4) Explain types of Operations perform on Queue. | |
| Que.3 | Attempt following questions.(Attempt any Two) | (10) |
| | <ol style="list-style-type: none">1) Explain Dynamic Memory Allocation functions with example.2) What is Linked List? Write an algorithm for push() and pop() operation on Dynamic Stack.3) Explain Search() and Sort() operation of Singly Link list with example.4) Write an algorithm for delete_first, delete_last and delete_specific node in singly link list. | |
| Que.4 | Attempt following questions.(Attempt any Two) | (10) |
| | <ol style="list-style-type: none">1) Explain Tree Traversal techniques in detail.2) Explain Graph traversal method in detail.3) Explain types of binary tree in detail.4) Write short note on Shortest path. | |
| Que.5 | Attempt following questions.(Attempt any Two) | (10) |
| | <ol style="list-style-type: none">1) Write note on Disk Space Allocation.2) Explain tree structured directory system in detail.3) Explain file system services in detail.4) Explain FAT file system in detail. | |
