

Seat No.

OCT-NOV 2025 WINTER EXAMINATION**1154 B.Tech. CBCS****Sub. Name: Data Structures****Sub. Code: 63526/73278****Day and Date: Friday ,05-12-2025****Total Marks: 70****Time: 02:30 PM To 05:00 PM**

Instructions: 1. All questions are compulsory
 2. Assume suitable data wherever necessary and mention it boldly
 3. Figures to the right indicate full marks

Q1) Solve any 2 of the following. (7 marks each) [14]

- a. Define Sorting and Write a note on following with their algorithms. [7]
 i. Selection Sort
 ii. Quick Sort
- b. What is Linked List? List and explain its types with suitable figures. [7]
- c. List and explain different graph terminologies. [7]

Q2) Solve any 2 of the following. (7 marks each) [14]

- a. Define graph and explain graph traversal techniques [7]
- b. List and Explain Operations performed on data structures [7]
- c. Write a note on Algorithm and explain Time and Space complexity. [7]

Q3) Solve any 2 of the following. (7 marks each) [14]

- a. What is Stack data structure? Explain the operations performed on it. [7]
- b. Choose appropriate search technique and apply over following set of data to search given key elements. [7]
 11, 23, 41, 58, 62, 77, 85, 89, 91, 99
 Key: 23
 Key :91
 Key: 100

- c. What is Hashing? List and Explain different Hash functions. [7]

Q4) Solve any 2 of the following. (7 marks each) [14]

- a. What is Doubly Link List? List various operations performed on Doubly Link [7]

List and explain any one with algorithm

- b.** Write a C Program or Pseudo Code for implementation of Stack using array. [7]
- c.** Explain following graph storage mechanisms. [7]
- i. Adjacency Matrix
 - ii. Adjacency List

Q5) Solve any 2 of the following. (7 marks each) [14]

- a.** Define Tree and Write a note on following [7]
- i. Binary Tree
 - ii. B Tree
 - iii. B + Tree
- b.** Apply the any sorting technic arrange following in Descending manner. [7]
- 34,11,98,45,10, 567,67, 5, 106, 23
- c.** Define Queue and describe Enqueue and Dequeue in detail. [7]

End Of Question Paper

Important Note for Chief Exam Officer / SRPD Coordinator / Sr Supervisor/ Student -

This Question Paper may be distributed for following Subjects as common code.

सदरची प्रश्नपत्रिका खालील विषयांकरिता वितरित करता येईल.

- 1] (101) Bachelor of Engineering (63526) Data Structures Part 2 SEM 3
- 2] (1154) B.Tech. CBCS (73278) Data Structures Part 2 SEM 3