

A-1142

Total Pages : 3

Roll No.

BCA(N)-202

**Data Structure and Programm
Methodology**

Examination, June 2025

Time : 2:00 Hrs.

Max. Marks : 70

Note :- This paper is of Seventy (70) marks divided into two (02) Sections 'A' and 'B'. Attempt the questions contained in these sections according to the detailed instructions given therein. *Candidates should limit their answers to the questions on the given answer sheet. No additional (B) answer sheet will be issued.*

Section-A

Long Answer Type Questions 2×19=38

Note :- Section 'A' contains Five (05) Long-answer type questions of Nineteen (19) marks each. Learners are required to answer any *two* (02) questions only.

1. What do you mean by sorting ? Write a program to illustrate queue sorting and selection sorting.
2. Define searching and explain binary search with example.
3. What is binary tree? Explain the different types of binary tree representations with examples.
4. What is Spanning Tree? Explain Kruskal's algorithm of determining the minimum spanning tree.
5. Discuss various methods for dealing with hash collisions. Explain their advantages and disadvantages.

Section–B

Short Answer Type Questions 4×8=32

Note :– Section ‘B’ contains Eight (08) Short-answer type questions of Eight (08) marks each. Learners are required to answer any *four* (04) questions only.

1. Explain the concept of dynamic memory allocation with an example.
2. Explain the difference between an array and a linked list.
3. Describe Preorder and Inorder traversal techniques with examples.

4. Explain the working of Heap Sort with an example.
5. What is the difference between open addressing and chaining in collision resolution?
6. Compare Bit Vector Representation with Linked List Representation.
7. Describe the structure of a Multiway Search Tree.
8. Explain the concept of the Knuth-Morris-Pratt string matching algorithm.
