

# BCA-12

December – Examination 2023  
**BCA (Part II) Examination**  
**DATA STRUCTURE AND ALGORITHM**  
Paper : BCA-12

*Time : 3 Hours ]*

*[ Maximum Marks : 70*

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*Note* :- The question paper is divided into three Sections A, B and C. Write answers as per the given instructions.

## Section-A

7×2=14

### (Very Short Answer Type Questions)

*Note* :- Answer all questions. As per the nature of the question delimit your answer in one word, one sentence or maximum up to **30** words. Each question carries 2 marks.

1. (i) What is Array ?
- (ii) What is use of circular queue ?

- (iii) Define Sorting.
- (iv) Define Graph.
- (v) Define Tree.
- (vi) Define Pointer.
- (vii) Define Linked List.

**Section-B** **4×7=28**

**(Short Answer Type Questions)**

*Note* :- Answer any *four* questions. Each answer should not exceed **200** words. Each question carries 7 marks.

2. Differentiate Stack and Queue.
3. Explain Stack Operations.
4. Explain Tree traversal with example.
5. Differentiate array and linked list.
6. Explain binary search with example.
7. Explain Insertion Sort.
8. Differentiate BFS and DFS.
9. Explain space and time complexity.

**Section-C** **2×14=28**

**(Long Answer Type Questions)**

*Note* :- Answer any *two* questions. You have to delimit your each answer maximum up to **500** words. Each question carries 14 marks.

10. Explain insertion and deletion in linked list.
11. Explain Dijkstra's shortest path algorithm.
12. Explain Recursion with suitable example.
13. Explain the following :
  - (a) Quick Sort
  - (b) Selection Sort