

Roll No. ....

97674

BCA 4th Semester (Full & Re-Appear)  
Examination – May, 2024

DATA STRUCTURE-II

Paper : BCA-207

Time : Three Hours ]

Maximum Marks : 80

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt five questions in all, selecting one question from each Unit. Question No. 1 is compulsory. All questions carry equal marks.

1. Explain the following in detail :

- (a) Hashing
- (b) AVL search trees

- (c) General trees
- (d) Uses of Graphs in data structure
- (e) Traversal in data structure
- (f) Tournament sort
- (g) Internal sorting
- (h) Uses of secondary keys

UNIT – I

2. (a) What is a B+ tree ? Using an example explain how searching is performed in a B+ tree ?
- (b) What is a thread ? Why do we need thread binary trees ? Also discuss the advantages and disadvantages of threaded binary trees.
3. Explain the following :
- (a) Huffman's algorithm
  - (b) Insertion and deletion in a Binary search tree

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## UNIT - II

4. What is Graphs in data structure ? Also explain the Dijkstra algorithm for shortest path in detail through suitable example.
5. Explain the following in detail through suitable example :
  - (a) Warshall's algorithm for shortest path
  - (b) Topological sorting

## UNIT - III

6. Explain the following in detail :
  - (a) Quick sort, heap sort and merge sort in through suitable example
  - (b) Comparison of various sorting and searching algorithms on the basis of their complexity
7. What is searching in data structure ? Explain linear search, binary search and merging through suitable example in detail.

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## UNIT - IV

8. Explain the following in detail :
  - (a) Hashing function and collision resolution methods
  - (b) Physical Storage devices and their characteristics
9. (a) What is file in data structure ? Explain the concept of file operations and comparison of various types of files in detail.  
  
(b) What is file Organization ? Explain serial, sequential and random access file in detail.

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