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

P. T. O.

   (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

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) Tolological 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 liner search, binary search and merging through suitable example in detail.

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.