B.C.A. 4th Semester (Full & Re-appear)
Examination, May–2023
DATA STRUCTURE-II
Paper– BCA-207

Time allowed : 3 hours] *[Maximum marks : 80*

***Before** answering the question, 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. Question no. 1 is compulsory. Select one question from each unit. All questions shall carry equal marks.*

1. (a) What is AVL search tree?

   (b) How is BST different from binary tree?

   (c) What is topological sorting?

   (d) What is the difference between graph and tree?

   (e) What is internal sorting?

   (f) What is the complexity of Quickort?

   (g) What is the difference between fixed and variable length record?

   (h) What is Hashing?

Unit-I

2. Compare B tree and B+ tree? Write an algorithm to insert a key into a B-tree and delete a key from B-Tree.

3. Explain:

   (i) m-way search tree

   (ii) Huffman's algorithm

Unit-II

4. (a) What do you mean by graph traversal. Explain Breadth First search traversal of graph.

   (b) What is Graph? Describe various type and operation on graph.

5. What do you mean by shortest path? Explain Dijkstra algorithm for shortest path.

Unit-III

6. (a) Write an algorithm to search an element using binary search.

   (b) Explain Tournament sort algorithm.

7. Write and explain:

   (i) Merge sort algorithm

   (ii) Heap Sort algorithm

Unit-IV

8 (a) What is the condition for collision? How collision can be resolved? Explain.

(b) Compare Inverted list and multi list file organization.

9. What is file organization? Describe various type of file organization briefly.