
UNIT WISE QUESTION BANK

ADVANCED DATA STRUCTURES

UNIT-1

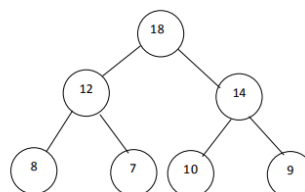
1. Explain K-way merging in detail.
2. Discuss briefly about Buffer handling for parallel operations
3. Discuss about Optimal Merging of runs

UNIT-2

1. What do you mean by a hash table and a hash function. Explain the following hash functions with an example (i). Division method (ii). Mid square (iii). Digit analysis
2. What do you mean by collision and how can you handle it by using linear probing.
3. What is hashing? Discuss about the Rehashing methods with examples
4. Explain in detail about Dynamic hashing using directories.
5. Explain in detail about Directory less Dynamic hashing.

UNIT-3

1. Specify the sequence of steps, that shows the deletion of elements in a sequential order from the following heap



2. Write an algorithm to insert an element in to a heap. Explain with a suitable example.
3. Explain the concept of priority queue with suitable example
4. Explain the concept of Binomial queue with suitable example.

5. Construct a heap using the following list of numbers: 12,9,8,3,7,5,10,18
6. What is a priority queue? List and explain different ways of representing them.

UNIT-4

1. Construct AVL tree for the days of week on their lexicographical order. Initial order of the days is as they occur in a week from Sunday to Saturday.
2. What is an AVL tree? Write the algorithm to search for an element of an AVL search tree.
3. What is an AVL search tree? How do we define the height of it? Discuss about the balance factor associated with a node of an AVL tree
4. What is a Red Black tree? Write the algorithm to insert an element of a Red Black tree.
5. What do you mean by a balance factor in AVL tree and explain about LL & RR rotations with an example.
- 6.

UNIT-5

1. Define a B+-tree? Write the algorithm to search for an element of B+ tree.
2. What is a B-tree? Write the algorithm to search for an element of a B-tree.
3. Define a B+-tree? Write the algorithm to insert an element into B+ tree.
4. What is a B-tree? Write the algorithm to insert an element into B+ tree.
5. What is a B-tree? Write the algorithm to delete an element from B+ tree.
6. What is a B-Tree. Specify its properties and describe the construction of a B-Tree for the following elements 5, 2, 13, 3, 45, 72, 4, 6, 9, 22

UNIT-6

1. Define a Digital Search Tree. Write the algorithm to insert an element into Digital Search Tree
2. What is a binary trie? Construct a binary trie with elements: 0001, 0011, 1000, 1001, 1100, 0010, 1101, 1010. Define a B+-tree? Write the algorithm to insert an element into B+ tree.
3. What is binary Trie? Explain.
4. Discuss about patricia with examples.
5. Discuss about Multiway trie. Explain its applications.