

## Data Structures Important Questions

### Unit-I

#### Short Answer Questions

1. List the advantages and disadvantages of Linked List?
2. Write the difference between linear and non linear data structures?
3. Define a Stack?
4. Explain applications of Stack?
5. Define Queue ADT?
6. Define DEQUEUE?
7. Define circular queue?
8. Define double linked list?
9. Write the Structure to create a node for Double linked list?

#### Long Answer Questions

1. Explain operations in single linked list?
2. Explain operations double linked list?
3. Explain operations in circular linked list?
4. Write stack program using linked list?
5. Explain stack operations?
6. Write a C program to evaluate postfix expression?
7. Explain circular queue operations?
8. Implement queue using two stacks?
9. Write the delete operation in circular Linked list?

### Unit – II

#### Short Answer Questions

1. Define Dictionary Data Structure
2. Write short notes on Hash table
3. What is hash function?
4. Define hash collision?
5. How to resolve hash collision?

#### Long Answer Questions

1. Explain Dictionary Operations
2. Explain Hashing with example
3. What is hash function? Explain the type of hash functions?
4. Write a C Program to implement dictionary ADT?

### Unit -III

#### Shot Answer Questions

1. Define Red-Black Tree
2. Define AVL Tree?
3. What are the properties of Binary Tree?
4. What is Splay Tree?
5. Explain the Properties of Red-Black Tree
6. Define height of AVL Tree?

#### Long answer Questions

1. Write a C program to search an element in binary search tree
2. Construct the binary search tree for the following elements ( 30,15,35,20,10,45,35,15,10,50)
3. Explain Binary Search Tree insert and delete operation with example?

4. Explain the Binary Search Tree traversals?
5. Explain the rotation in Splay tree
6. Explain AVL tree insert and delete operations?

#### Unit -IV

##### Shot Answer Question

1. What is directed Graph
2. What are the applications of Graph
3. Write the differences between directed and undirected graphs
4. Explain graph terminology?
5. What is Max Heap?
6. What is Min Heap?
7. What is external Sort?

##### Long Answer Questions

1. What is graph? Explain types of graphs
2. Write a C program for merge sort?
3. Write a C program for Heap Sort?
4. Explain the Graph representation Methods?
5. Explain BFS and DFS?
6. Write algorithm for DFS?
7. Write algorithm for BFS?