

## **Questions for Exam NO 1**

**Which of the following is a non-linear data structure?**

- a) Stack**
- b) Queue**
- c) Linked list**
- d) Tree**

**Which data structure is best suited for implementing a LIFO data structure?**

- a) Queue**
- b) Stack**
- c) Linked list**
- d) Binary search tree**

**Which data structure is used in depth-first search of a graph?**

- a) Queue**
- b) Stack**
- c) Linked list**
- d) Binary search tree**

**Which of the following operations can be performed on a stack?**

- a) push**
- b) pop**
- c) peek**
- d) All of the above**

**Which of the following data structures allows for constant-time insertion, deletion, and search operations?**

- a) Array**
- b) Linked list**
- c) Hash table**
- d) Binary tree**

**Which of the following data structures is used for efficient searching, insertion, and deletion operations in a sorted list?**

- a) Array**
- b) Linked list**
- c) Binary search tree**
- d) Heap**

**Which type of binary tree has every level completely filled except possibly the last level?**

- a) Full binary tree**
- b) Complete binary tree**
- c) Perfect binary tree**
- d) Balanced binary tree**

**Which of the following data structures is used to implement a graph?**

- a) Array**
- b) Linked list**
- c) Adjacency matrix**
- d) All of the above**

**Which of the following data structures is used to implement a priority queue?**

- a) Stack**
- b) Queue**
- c) Heap**
- d) Linked list**

**Which data structure is used in breadth-first search of a graph?**

- a) Queue**
- b) Stack**
- c) Linked list**
- d) Binary search tree**

**A queue follows the Last-In-First-Out (LIFO) principle.**

**A) True B) False?**

**A binary search tree is a type of binary tree in which the left subtree of a node contains only values less than the node.**

**A) True B) False?**

**A heap is a specialized tree-based data structure in which the parent node is either greater than or less than its children.**

**A) True B) False?**

**A linked list is a data structure that consists of a sequence of nodes, where each node contains a value and a pointer to the next node in the sequence.**

**A) True B) False?**

**A hash table is a data structure that uses a hash function to map keys to values.**

**A) True B) False?**

**Depth-first search is a graph traversal algorithm that visits all vertices of a graph in breadth-first order.**

**A) True B) False?**