

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?