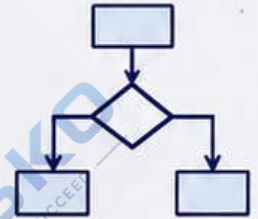
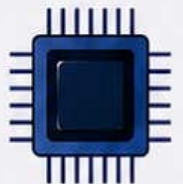


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Most Important Topics

INSTRUCTIONS



These questions are selected based on previous year university exams.



Practice these questions to understand important concepts deeply.



Focus on frequently asked topics and their variations.



Solve these questions within the given time for better exam preparation.



Revise regularly and test yourself to improve your score.

Practice Smart • Stay Consistent • Score High!

DATA STRUCTURES

ALGORITHMS

COMPUTER NETWORKS

DATABASE SYSTEMS

Practice More ✓
Revise Well ✓
Score Better ✓
Succeed

Data Structure

Most Important Topics

Unit I: Data Structure and Arrays

1. Introduction to Data Structure

Most important concepts:

- Definition of Data Structure
- Primitive Data Structures
- Non-Primitive Data Structures
- Linear Data Structures
- Non-Linear Data Structures
- Basic Data Structure Operations

Important Question

Explain the types of data structures with examples.

2. Arrays

This is one of the **most important topics in Unit I.**

Prepare:

- Definition and concepts of Array
- Memory Representation of Array
- Array Traversing
- Array Insertion
- Array Deletion

Must Practice

- Traversing an array
- Inserting an element at a specific position
- Deleting an element from a specific position

Important Question

Explain memory representation and operations on arrays.

Unit II: Stack and Queue

1. Stack

A very important topic.

Prepare:

- Definition and concepts
- Memory Representation
- Stack Operations
 - Traversing
 - Insertion / **Push**
 - Deletion / **Pop**

Important Concepts

- Stack Overflow
- Stack Underflow
- **LIFO principle**

Important Question

Explain Stack with Push and Pop operations.

2. Queue

Another highly important topic.

Prepare:

- Definition and concepts
- Memory Representation
- Queue Operations
 - Traversing
 - Insertion / **Enqueue**
 - Deletion / **Dequeue**
- Types of Queue

Important Concepts

- **FIFO principle**
- Front and Rear

Important Question

Explain Queue with Enqueue and Dequeue operations.

Unit III: Linked List and Trees

1. Linked List

One of the **highest-priority topics** in the entire syllabus.

Prepare:

- Definition and concepts
- Memory Representation
- Types of Linked List
 - Singly Linked List
 - Doubly Linked List
 - Circular Linked List
- Operations
 - Traversing
 - Insertion
 - Deletion

Important Question

Explain different types of Linked Lists with their operations.

2. Trees

Very important and frequently asked concept.

Prepare:

- Basic Tree Definition
- Tree Terminologies
 - Root
 - Parent
 - Child
 - Leaf
 - Level
 - Height

- Memory Representation of Trees
- Types of Trees
 - Binary Tree
 - Complete Binary Tree
 - Binary Search Tree

3. Tree Traversal

Extremely important.

Learn the difference between:

1. **Preorder Traversal**
 - Root $\rightarrow$ Left $\rightarrow$ Right
2. **Inorder Traversal**
 - Left $\rightarrow$ Root $\rightarrow$ Right
3. **Postorder Traversal**
 - Left $\rightarrow$ Right $\rightarrow$ Root

Also prepare:

- Insertion in Binary Search Tree
- Deletion in Binary Search Tree

Important Question

Explain Preorder, Inorder and Postorder traversal with an example.

Unit IV: Searching and Sorting

1. Searching Techniques

Prepare:

Linear Search

- Concept
- Algorithm
- Example

Binary Search

- Concept
- Algorithm
- Example
- Requirement of a sorted array

Indexed Sequential Search

- Basic concept and working

🔥 Very Important Question

Differentiate between Linear Search and Binary Search.

2. Sorting Techniques

This is a **very important programming and theory topic**.

Prepare:

Bubble Sort

- Concept
- Algorithm
- Passes

Selection Sort

- Concept
- Algorithm

Insertion Sort

- Concept
- Algorithm

Important Question

Explain Bubble Sort, Selection Sort and Insertion Sort with examples.



Overall Top 15 Most Important Topics

Rank

Topic



1

Linked List and its Operations



2

Stack: Push and Pop



3

Queue: Enqueue and Dequeue

4

Tree Traversal: Preorder, Inorder, Postorder

5

Binary Search Tree: Insertion and Deletion

6

Array Operations: Traversing, Insertion, Deletion

7

Bubble Sort

8

Selection Sort

9

Insertion Sort

10

Binary Search

11

Linear Search

12

Types of Linked List

- 13 Types of Trees
- 14 Memory Representation of Data Structures
- 15 Types of Data Structures

Best Preparation Priority

First Priority 🔥🔥

Stack → Queue → Linked List → Trees → Tree Traversal

Second Priority ★

Array Operations → BST Insertion/Deletion → Searching → Sorting

Third Priority

Types of Data Structures → Memory Representation → Tree Terminologies → Indexed Sequential Search

For this subject, I would especially focus on **algorithms and step-by-step operations**, because topics like **Push, Pop, Enqueue, Dequeue, Array Insertion/Deletion, Linked List operations, Tree Traversals, Searching, and Sorting** are the core of the syllabus.