Data Structure (CS-303) — UNIT 3 PYQ ANALYSIS 🔥

UNIT-3 IMPORTANT TOPICS

TREE BASICS

- Tree terminology
- Height, depth, degree
- Binary tree types

BST

- Binary Search Tree
- Insertion
- Searching
- Traversals

AVL TREE

- Balance factor
- Rotations

HEAP

- Max heap
- Min heap
- Heap operations

ADVANCED TREES

- B Tree
- B+ Tree
- B* Tree
- Red-Black Tree
- Forest
- Multi-way Tree

⭐ MOST REPEATED QUESTIONS

---

1. Tree Traversals

🔥 MOST REPEATED QUESTION

Appeared in:

- June 2024
- Dec 2025
- June 2023
- Dec 2024

Expected in Upcoming Exam

✅ 100% HIGHLY EXPECTED

Prepare:

- Preorder
- Inorder
- Postorder
- Examples

---

2. Binary Search Tree (BST)

🔥 VERY IMPORTANT

Appeared in:

- Dec 2025
- June 2024
- Dec 2024

Expected

✅ HIGH chance

Prepare:

- Definition
- Insertion
- Searching
- Advantages

---

3. AVL Tree

🔥 VERY IMPORTANT

Appeared in:

- June 2024
- June 2023
- Dec 2025

Expected

✅ HIGHLY EXPECTED

Prepare:

- Balance factor
- Rotations
- AVL properties

---

4. Difference Between BST and AVL Tree

🔥 REPEATED MANY TIMES

Appeared in:

- June 2023
- Dec 2024

Expected

✅ HIGH chance

---

5. Heap Tree

🔥 IMPORTANT

Appeared in:

- June 2024
- Dec 2025

Expected

✅ HIGH chance

Prepare:

- Max heap
- Min heap
- Heap applications

---

6. B Tree

🔥 VERY IMPORTANT

Appeared in:

- Dec 2024
- June 2023

Expected

✅ HIGH chance

Prepare:

- Structure
- Features
- Applications

---

7. Red-Black Tree

Appeared in:

- June 2024
- Dec 2025

Expected

✅ Important

Prepare:

- Properties
- Coloring rules
- Advantages

---

8. Binary Tree Types

Appeared in:

- June 2023
- Dec 2024

Expected

✅ Moderate to High

Prepare:

- Full tree
- Complete tree
- Perfect tree
- Skewed tree

🔥 MOST EXPECTED QUESTIONS FOR UPCOMING EXAM

TOP 10 PREDICTED QUESTIONS

1.

Explain tree traversals with example.

2.

Explain BST operations with example.

3.

Explain AVL tree with rotations.

4.

Differentiate BST and AVL tree.

5.

Explain Heap tree with applications.

6.

Explain B Tree with properties.

7.

Explain Red-Black Tree.

8.

Explain binary tree types.

9.

Define tree terminology.

10.

Compare different types of trees.

🔥 MOST IMPORTANT 14-MARK QUESTIONS

VERY HIGH PROBABILITY

1.

Explain BST operations and traversals.

2.

Explain AVL tree with rotations.

3.

Explain Heap tree and applications.

4.

Explain B Tree, B+ Tree and B* Tree.

5.

Differentiate BST and AVL tree.

🔥 MOST IMPORTANT 7-MARK QUESTIONS

1. Define tree terminology.

2. Explain binary tree types.
3. Explain BST.
4. Explain tree traversals.
5. Define AVL tree.
6. Explain heap tree.
7. Explain B Tree.
8. Explain Red-Black Tree.

FINAL EXAM STRATEGY 🚀

FIRST PRIORITY

✅ Tree traversals
✅ BST
✅ AVL Tree
✅ BST vs AVL

SECOND PRIORITY

✅ Heap Tree
✅ B Tree
✅ Red-Black Tree

THIRD PRIORITY

✅ Forest
✅ Multi-way Tree
✅ B+ Tree and B* Tree