

**SUNDAR COACHING CENTRE**  
**SUBJECT – DATA STRUCTURES AND ALGORITHMS**  
**AVL TREES**

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**Question-1**

What is the full form of AVL trees? How are they useful in comparison to Normal Binary Search Trees?

[2]

**Question-2**

Write a **recursive algorithm** to find:

- i. Height of a node
- ii. Balance Factor of a node

Properly show the base cases and recursive cases.

[2]

**Question-3**

The following are a list of important Hindu Festivals of 2023:

- i. Diwali
- ii. Raksha Bandhan
- iii. Geeta Jayanti
- iv. Maha Shivaratri
- v. Sankranti/Pongal
- vi. Guru Purnima
- vii. Krishna Janmashtami
- viii. Ganesh Chaturthi
- ix. Holi
- x. Dusshera

Insert them into an AVL tree in order (considering timeline of the festivals). [3]

Then write the **in-order** and **post-order** traversals of the formed tree. [1]

Then delete the following festivals one by one. Replace them with their in-order successors, if not present, then use in-order predecessor:

- i. Maha Shivaratri
- ii. Raksha Bandhan
- iii. Ganesh Chaturthi

[2]

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*Prepared by: Prajwal Sundar*

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