**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]

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**Question-2**

Write a **recursive algorithm** to find:

1. Height of a node
2. Balance Factor of a node

Properly show the base cases and recursive cases.

[2]

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**Question-3**

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

1. Diwali
2. Raksha Bandhan
3. Geeta Jayanti
4. Maha Shivaratri
5. Sankranti/Pongal
6. Guru Purnima
7. Krishna Janmashtami
8. Ganesh Chaturthi
9. Holi
10. 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:

1. Maha Shivaratri
2. Raksha Bandhan
3. Ganesh Chaturthi [2]

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