Que1. Explain the concept of recursion and how it can simplify certain problems?

Ans: Recursion is a programming technique where a method calls itself in order to solve a problem. It is often used to break down complex problems into simpler subproblems.

It consists of two things:

* Base Case: The condition under which the recursion stops.
* Recursive Case: The part where the method calls itself with modified arguments.

Que2. Discuss the time complexity of your recursive algorithm?

Ans: The time complexity of this algorithm is O(n) as it will go till the base condition

The space complexity of this algorithm is O(n) because it uses a recursive stack

Que3. Explain how to optimize the recursive solution to avoid excessive computation?

Ans: To optimize recursive solution you can either convert that recursive solution to iterative solution or you can use Memoization, i.e. we store the result of previous calculations so that when that elements come again, we can directly use that