Name - Nimish Patil
9565 TE COMPS A

A;

Postlab - 3

Q1 What is the time complexity of the water jug problem?

⇒ In the worst-case scenario, we would need to visit every possible state to find a solution. each state has six possible next states (filling, emptying or pouring each jug), so the branching factor is 6. Therefore, the time complexity is exponential $O(6^d)$, where d is the depth of the search tree.

Q2 Why is DFS not used for solving a water jug problem?

⇒ DFS is not typically used for solving the water jug problem because it may get stuck in deep branches without finding a solution does not guarantee finding the shortest path to the solution and may exhaust memory of if the search space is large.