**Knapsack Problem**

1. **What is the main objective of the 0/1 Knapsack problem?**
   * A) Minimize the weight of the knapsack
   * B) Maximize the value of items in the knapsack
   * C) Minimize the number of items in the knapsack
   * D) Maximize the weight of items in the knapsack

**Answer:** B) Maximize the value of items in the knapsack

1. **In the 0/1 Knapsack problem, if the capacity of the knapsack is C and there are n items, what is the time complexity of the dynamic programming solution?**
   * A) O(n \* C)
   * B) O(n^2)
   * C) O(C)
   * D) O(n \* log(C))

**Answer:** A) O(n \* C)

1. **Which of the following problems is suitable for the 0/1 Knapsack dynamic programming approach?**
   * A) Selecting items to maximize profit with a weight limit
   * B) Selecting items to minimize cost without a weight limit
   * C) Selecting items to maximize profit with no weight limit
   * D) Selecting items to minimize profit with a weight limit

**Answer:** A) Selecting items to maximize profit with a weight limit

**Fractional Knapsack Problem**

1. **In the Fractional Knapsack problem, what is the strategy to maximize the value of the knapsack?**
   * A) Always include the item with the highest weight
   * B) Always include the item with the highest value
   * C) Include items based on the highest value-to-weight ratio
   * D) Include items based on the lowest value-to-weight ratio

**Answer:** C) Include items based on the highest value-to-weight ratio

1. **Which algorithm is commonly used to solve the Fractional Knapsack problem?**
   * A) Dynamic Programming
   * B) Greedy Algorithm
   * C) Divide and Conquer
   * D) Backtracking

**Answer:** B) Greedy Algorithm

1. **If you are allowed to take fractions of items in the Fractional Knapsack problem, what is the time complexity of the greedy solution?**
   * A) O(n \* log(n))
   * B) O(n^2)
   * C) O(n \* C)
   * D) O(n)

**Answer:** A) O(n \* log(n))

**Coin Change Problem**

1. **In the Coin Change problem, what is the objective when given a set of coin denominations and a total amount?**
   * A) Minimize the number of coins needed to make up the total amount
   * B) Maximize the number of coins needed to make up the total amount
   * C) Minimize the total value of coins used
   * D) Maximize the total value of coins used

**Answer:** A) Minimize the number of coins needed to make up the total amount

1. **What is the time complexity of the dynamic programming solution for the Coin Change problem where n is the number of coin denominations and amount is the total amount?**
   * A) O(n \* amount)
   * B) O(n^2)
   * C) O(amount^2)
   * D) O(n + amount)

**Answer:** A) O(n \* amount)

1. **Which of the following approaches is not suitable for solving the Coin Change problem efficiently?**
   * A) Greedy Algorithm
   * B) Dynamic Programming
   * C) Recursive Approach
   * D) Brute Force

**Answer:** A) Greedy Algorithm (only suitable for certain cases with specific denominations)