6 Lecture - CS502

Important Mcqs

1. Which of the following is not a characteristic of Dynamic Programming?

- A. It is a top-down approach
- B. It is based on recursion
- C. It involves solving subproblems only once
- D. It is a brute force technique

Answer: D

Which of the following is the main goal of Dynamic Programming?

- A. To solve complex optimization problems
- B. To solve linear equations
- C. To simplify algorithms
- D. To generate random numbers

Answer: A

Which of the following is an example of a problem that can be solved using Dynamic Programming?

- A. Sorting an array of integers
- B. Finding the shortest path in a graph
- C. Calculating the factorial of a number
- D. Generating random strings

Answer: B

What is the time complexity of Dynamic Programming?

- A. O(n)
- B. O(n log n)
- C. O(n^2)
- D. It depends on the problem being solved

Answer: D

Which of the following is a common technique used in Dynamic Programming?

- A. Binary search
- B. Bubble sort
- C. Memoization
- D. Quick sort

Answer: C

Which of the following is a disadvantage of using Dynamic Programming?

- A. It can be time-consuming
- B. It requires advanced mathematical knowledge
- C. It can lead to memory overflow
- D. It cannot be used for optimization problems

Answer: C

What is the difference between memoization and tabulation in Dynamic Programming?

A. Memoization involves storing solutions in a table, while tabulation involves solving

subproblems recursively.

- B. Memoization involves solving subproblems recursively, while tabulation involves storing solutions in a table.
- C. Memoization and tabulation are the same thing.
- D. Memoization is only used for top-down approaches, while tabulation is only used for bottom-up approaches.

Answer: B

Which of the following is an example of a problem that can be solved using both recursive and iterative approaches?

- A. Finding the nth Fibonacci number
- B. Calculating the sum of an array of integers
- C. Sorting an array of integers
- D. Generating random numbers

Answer: A

Which of the following is not a step involved in solving a problem using Dynamic Programming?

- A. Breaking down the problem into smaller subproblems
- B. Storing the solutions of each subproblem in a table
- C. Solving the subproblems in a random order
- D. Combining the solutions of each subproblem to solve the original problem

Answer: C

Which of the following is a common optimization technique used in Dynamic Programming?

- A. Greedy algorithm
- B. Divide and conquer
- C. Backtracking
- D. Branch and bound

Answer: A