

# 3 Lecture - CS502

## Important Mcqs

1. **What is the purpose of the Divide and Conquer strategy?**

- a) To break down a complex problem into smaller subproblems.
- b) To solve a problem recursively.
- c) To combine the solutions of smaller subproblems to obtain the final solution.
- d) All of the above.

**Answer: d) All of the above.**

**Which of the following problems can be solved using the Divide and Conquer strategy?**

- a) Sorting an array of integers.
- b) Finding the shortest path between two points in a graph.
- c) Calculating the value of an arithmetic expression.
- d) All of the above.

**Answer: d) All of the above.**

**What is the time complexity of the Divide and Conquer strategy?**

- a)  $O(n)$
- b)  $O(\log n)$
- c)  $O(n \log n)$
- d)  $O(n^2)$

**Answer: c)  $O(n \log n)$**

**Which of the following is not a step involved in the Divide and Conquer strategy?**

- a) Breaking down the problem into smaller subproblems.
- b) Solving the subproblems recursively.
- c) Combining the solutions of smaller subproblems.
- d) None of the above.

**Answer: d) None of the above.**

**Which of the following is an example of the Divide and Conquer strategy?**

- a) Merge sort.
- b) Quick sort.
- c) Binary search.
- d) All of the above.

**Answer: d) All of the above.**

**Which of the following is true about the Divide and Conquer strategy?**

- a) It is a top-down approach.
- b) It is a bottom-up approach.
- c) It can be both top-down and bottom-up.
- d) None of the above.

**Answer: a) It is a top-down approach.**

**What is the main advantage of the Divide and Conquer strategy?**

- a) It simplifies complex problems.

- b) It is easy to implement.
- c) It has a fast running time.
- d) None of the above.

**Answer: c) It has a fast running time.**

**Which of the following problems cannot be solved using the Divide and Conquer strategy?**

- a) Multiplying two large integers.
- b) Finding the maximum element in an array.
- c) Calculating the Fibonacci sequence.
- d) All of the above can be solved using the Divide and Conquer strategy.

**Answer: b) Finding the maximum element in an array.**

**Which sorting algorithm uses the Divide and Conquer strategy?**

- a) Bubble sort.
- b) Insertion sort.
- c) Merge sort.
- d) Selection sort.

**Answer: c) Merge sort.**

**Which of the following is true about the subproblems generated in the Divide and Conquer strategy?**

- a) They must be of equal size.
- b) They must be disjoint.
- c) They can be of different sizes.
- d) None of the above.

**Answer: c) They can be of different sizes.**