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.