10 Lecture - CS402

Important Mcqs

1. **What is nondeterminism?**
   A. A property of systems with multiple possible outcomes.
   B. A property of systems with a single possible outcome.
   C. A property of systems that are deterministic.
   Answer: A

   Which of the following is an example of a nondeterministic system?
   A. A vending machine that always dispenses the correct product.
   B. A lottery system where the winning numbers are drawn at random.
   C. A calculator that always gives the correct result.
   Answer: B

   What is a nondeterministic algorithm?
   A. An algorithm that always produces the same output for a given input.
   B. An algorithm that may produce different outputs for a given input.
   C. An algorithm that cannot produce any output.
   Answer: B

   Which of the following is a common use of nondeterminism in computer science?
   A. In modeling deterministic systems.
   B. In modeling probabilistic systems.
   C. In modeling chaotic systems.
   Answer: B

   What is the difference between nondeterminism and randomness?
   A. Nondeterminism is a property of a system, while randomness is a property of an event.
   B. Nondeterminism always leads to unpredictable outcomes, while randomness may or may not.
   C. Nondeterminism and randomness are the same thing.
   Answer: A

   What is the nondeterministic complexity of an algorithm?
   A. The minimum number of steps required to solve a problem deterministically.
   B. The maximum number of steps required to solve a problem deterministically.
   C. The maximum number of steps required to solve a problem on average.
   Answer: B

   Which of the following is an example of a nondeterministic decision problem?
   A. Sorting a list of numbers in ascending order.
   B. Finding the shortest path between two points in a graph.
   C. Deciding if a given Boolean formula is satisfiable.
   Answer: C

   Can a nondeterministic algorithm be implemented on a deterministic computer?
   A. Yes, by using randomization.

B. Yes, by using backtracking or guessing.
C. No, it is not possible.
Answer: B

Which of the following is a drawback of using nondeterminism in algorithms?
A. It can lead to incorrect results.
B. It can make the algorithm slower.
C. It can make the algorithm more complex.
Answer: A

What is the advantage of using nondeterminism in algorithms?
A. It can lead to faster algorithms.
B. It can make the algorithm more efficient.
C. It can simplify the problem being solved.
Answer: A (Note: While nondeterminism can lead to faster algorithms in some cases, this is not always true and can be a disadvantage in other cases.)