

CS2223 D Term 2020 Quiz 24

(1 point) Question 1: “My brain is open. . . .”

I pledge that I am taking this quiz on my own, with help from no one else and no notes:

(3 points) Question 2: How are Class P and Class NP known to be related right now?

- a.) They are disjoint.
- b.) Class NP is a subset of Class P .
- c.) Class P is a subset of Class NP .
- d.) They overlap, but there are problems in Class P not in Class NP , and vice versa.
- e.) No one knows for sure.

(3 points) Question 3: We discussed a class of problems called NP . What does the NP stand for?

- a.) Not Possible
- b.) Never Possible
- c.) Non-Predictable
- d.) Non-Polynomial
- e.) Non-Deterministic Polynomial

(3 points) Question 4: Suppose we are considering a problem known to be in the Class NP -Complete. What can we say about our problem?

- a.) A polynomial-time algorithm for its solution is not currently known.
- b.) A polynomial-time solution to any other NP -Complete problem would yield a polynomial-time solution to ours.
- c.) A polynomial-time solution to ours would yield a polynomial-time solution to *every other* NP -Complete problem.
- d.) We can verify a proposed solution to our problem in polynomial-time.
- e.) All of the Above

(1 point) Bonus Question: We mentioned that Class P and Class NP consist only of *decision problems*. What makes a problem a decision problem?

- a.) The result is an approximation.
- b.) The result is a Boolean.
- c.) The input to the problem is a non-negative integer.
- d.) An algorithm exists which solves the problem in finite time.
- e.) The problem is reducible to either the TRAVELING SALESMAN PROBLEM or the HAMILTONIAN PATH PROBLEM.