Quiz Guide

CSC 28 – Discrete Structures for Computer Science

To maximize your quiz performance: attend lectures, do readings, start homework early, ask for help when you need it, review problems and solutions before the quiz. If anything in this assignment does not make sense, please ask for help.

1) Make sure you've done the assigned reading and have reviewed your notes. Some people find it useful to rewrite their notes into a second notebook, cleaning them up and correcting them as they go.

2) Any problem similar to the ones in the homework may be on the quiz. Study them until you completely understand. Some people find it useful to try to write their own problems and then have their classmates try to solve them.

3) Here are some problems from old quizzes. There is no guarantee that the problems on your quiz will be like these, but it may be useful to see what I've asked in the past.

Construct a simple relation on $\{1, 2, 3\}$ that is reflexive but not symmetric. Give a counterexample for symmetry in the form of a sentence.

Construct a simple relation on $\{1, 2, 3\}$ that is symmetric but not transitive. Give a counterexample for transitivity in the form of a sentence.

Let $R = \{((a, b), (c, d)) : a + b = c + d\}$ be a relation on $\mathbb{Z} \times \mathbb{Z}$. What is in the equivalence class $[(2, 3)]$? Give your answer in set notation.

Note: This one is tricky because the relation is is set of ordered pairs of ordered pairs. So, the set that the relation is on is a set of ordered pairs and each equivalence class is a set of ordered pairs.

Let $R = \{(a, b) : a - b = 0\}$ be a relation on $\mathbb{Z}$. Write a proof that R is transitive. Your proof should follow this model: *Proof: Suppose ... are in R. By definition ... Therefore ... is in R.*

Let $R = \{(a, b) : b = ak$ for some integer $k\}$ be a relation on integers.

R is not an equivalence relation. Why not? Give a counterexample.

Prove that R is transitive.