

CSCI 1323 (Discrete Structures), Spring 2013

Review for Midterm Exam

1 Format of the exam

The exam will be in class March 5. You will have 75 minutes. Like the quizzes, it is open book/notes, which means you can use the textbook, material from the course Web site, and your notes and graded work. You may not use a calculator or computer *except* to view the above material.

Most questions will be similar in form to those in the quizzes, minute essays, and homework assignments, and somewhere in between with regard to difficulty (more difficult than the quiz questions, easier or at least shorter than some of the homework).

2 Topics to review

You are responsible for all material covered in class or in the assigned reading through section 2.4 of the textbook. You should review in particular the following topics. It would probably also be helpful to review sample solutions for the quizzes, assignments, and minute essays.

- Propositional logic:
 - Translating English into propositional-logic wffs (emphasizing understanding of propositional logic connectives over ability to untangle complicated English).
 - Proving that a propositional-logic wff is a tautology using truth tables.
 - Proving that a propositional-logic wff is a tautology using proof rules.
- Predicate logic (propositional logic plus quantifiers):
 - Translating English into predicate-logic wffs (emphasizing understanding of quantifiers over ability to untangle complicated English).
 - Determining whether a predicate-logic wff is true in a given interpretation.
 - Proving that a predicate-logic wff is valid using proof rules.
- Proof techniques:
 - Direct proofs, proof by cases, proof by contraposition, proof by contradiction.
 - Proofs by induction.
- Recursion:
 - Recursive definitions of sequences, sets, operations, and algorithms.