Final Exam Guideline for Discrete Mathematics

The final exam for the course consists of 16 to 18 problems on the basic topics. Most of these problems are in a way that if you understand the concept, you can answer the question in a minute. These are the topics on the final exam.

1. Statements and Truth Values (Sections 2.1 and 2.2)

2. Predicates and Quantified Statements with Multiple Quantifiers (Sections 3.2 and 3.3)

3. Modular arithmetic and congruence (Section 4.5)

4. The floor and ceiling functions (Section 4.6)

5. Mathematical Induction and Well-Ordering Principle (Sections 5.2 to 5.4)

6. Operations on sets and Properties of sets (6.1 and 6.2)

7. Power sets and the number of subsets (6.1 and 6.3)

8. Boolean Algebra and its axioms and properties (6.4)

9. Definition of functions, Domain, Codomain, and Range of functions and concept of being a well-defined function (7.1)

10. One-to-one and onto functions, and finding inverse functions (7.2)

11. Composition of functions fog (7.3)

12. Countable and Uncountable sets (7.4)

13. Relations, Equivalence Relations, the reflexive, symmetric and transitive properties and the Transitive Closure of a relation (Sections 8.1 to 8.3)