

CS 378 Sample Midterm: Spring, 2013

Instructor: Dr. Bill Young

Name: _____

Read the questions carefully and answer four of the five questions. Be as precise and as concise as possible. You can consult your book or notes, but all work must be your own. Please write legibly and organize your answers carefully.

Please indicate which of the five questions you did not answer: _____

1. (10 points) Which of the following security-related issues often have technical solutions involving cryptographic hash functions: confidentiality, integrity, availability, non-repudiation, authentication? Justify your answer.
2. (10 points) The Internet is conceptually organized as a *layered architecture*, e.g., the OSI stack model. For any given architecture, consider a layer in the “middle” of the stack. In general, what can it expect from the layers above and below it, and what can they expect from it?
3. (10 points) Why do employees constitute one of the greatest threats to information security?
4. (2 parts–10 points total) Suppose you invest your life savings to open a small coffee shop.
 - (a) (5 points) Outline how you would conduct a risk assessment for your new business. (I’m less interested in the actual risks than in the procedure you follow.)
 - (b) (5 points) To deal with the risks identified by your risk assessment from part (a), explain how you decide when to use: risk acceptance, risk avoidance, risk mitigation, risk transfer.
5. (10 points) Explain the differences and relationships among the following four concepts: threat, vulnerability, attack, risk.