Assignment 3—Chapters 2-4
CptS 425/580—Network Security
Assigned: 9 February 2009
Due: 18 February 2009, 4:15 pm

Explain and/or justify all of your answers. Short answers are sufficient, but ‘Yes’/’No’ answers will not receive full credit. If you make any assumptions, please state them.

Chapter 2
Answer the following question from the Exercises (pg. 35)
30 Pts  Question 1

Chapter 3
15 Pts  Why is Theorem 3-2 an important and basic theoretical result in the field of Computer and Network Security?
30 Pts  Using the algorithms given in the proof of Theorem 3-2, specify the access control matrix that will result after five steps of the following Turing machine on the given tape configuration, with the read head on the left-most ‘A’.

Tape Configuration: 

A | B | B | A | b | b | ...

Note: The algorithms in the book assume an initially blank tape. Therefore, given the four initial input characters on this Turing machine tape, you may start with a “pre-loaded” 4 x 4 access control matrix that corresponds to the initial tape configuration.

Chapter 4
Answer the following questions from the Exercises (pgs 59-60).
15 Pts  Question 4.3
15 Pts  Question 4.4