Assignment 2—Chapters 1-3
CptS 425/580—Network Security
Assigned: 17 January 2007
Due: 24 January 2007, 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 1
Answer the following questions from the Exercises (pgs 22-25).
15 Pts  Question 1.1
15 Pts  Question 1.3
15 Pts  Question 1.5
15 Pts  Question 1.7
10 Pts  Question 1.8
10 Pts  Question 1.9
10 Pts  Question 1.20

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.

Tape Configuration:  

Turing Machine:

K = { p, q, r } initial state = p, halt state = r
M = { A, B }
\[ \delta = \begin{align*}
\delta(p,A) &= (p, A, R) \\
\delta(p,B) &= (q, A, L) \\
\delta(q,A) &= (p, A, R) \\
\delta(q,B) &= (h, A, R)
\end{align*} \]