CPEN 442, Fall 2015 Key

Quiz #5

Your Family name: _____

Your Given name: _____

Your student ID: _____

Your CPEN 442 alias: _____

_____

#	Points	Out of
1		8
2		4
3		4
4		5
5		3
6		2
7		6
TOTAL		

Notes:

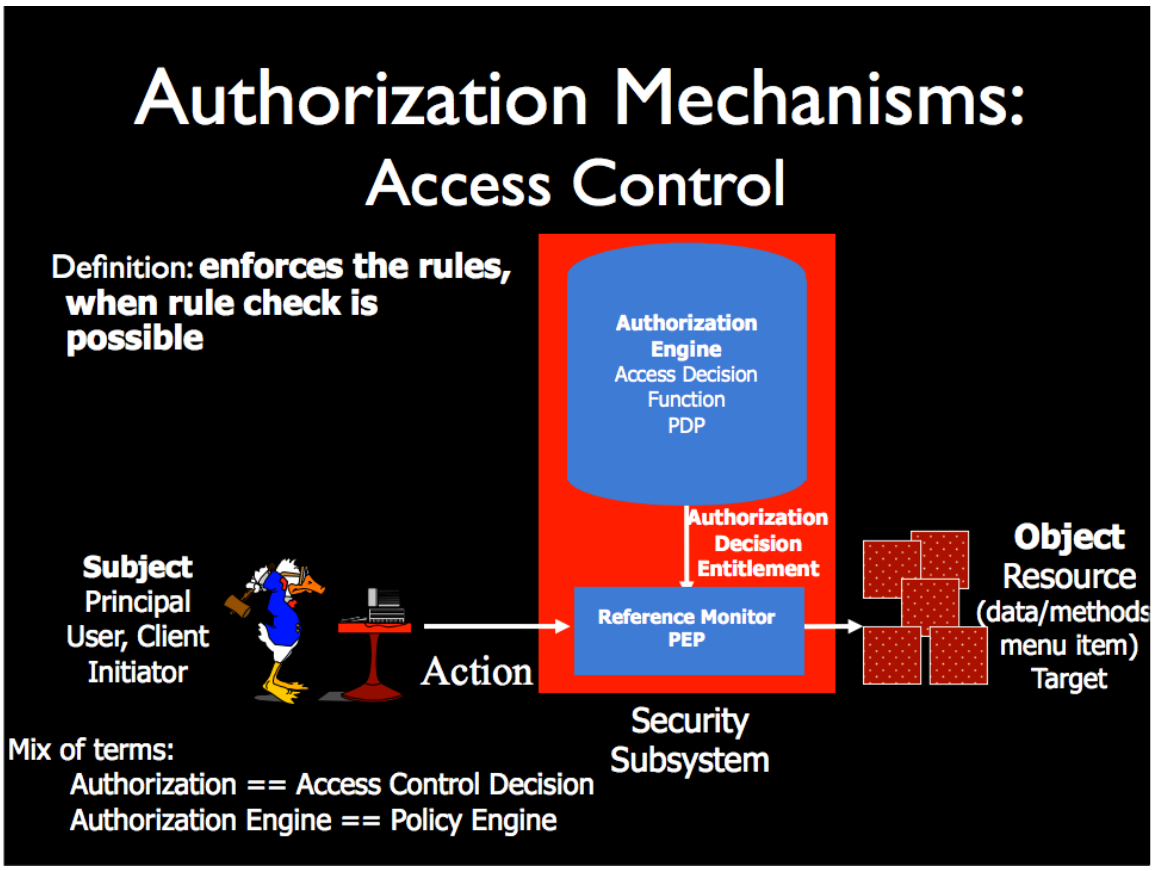
- Make sure your handwriting is legible. If the teaching staff does not understand what your wrote, they mark your answer as if the unreadable text is missing.

- Aim to be precise and to the point. The experience of teaching this course since 2004 suggests that excessively long answers tend to correlate with lower marks.

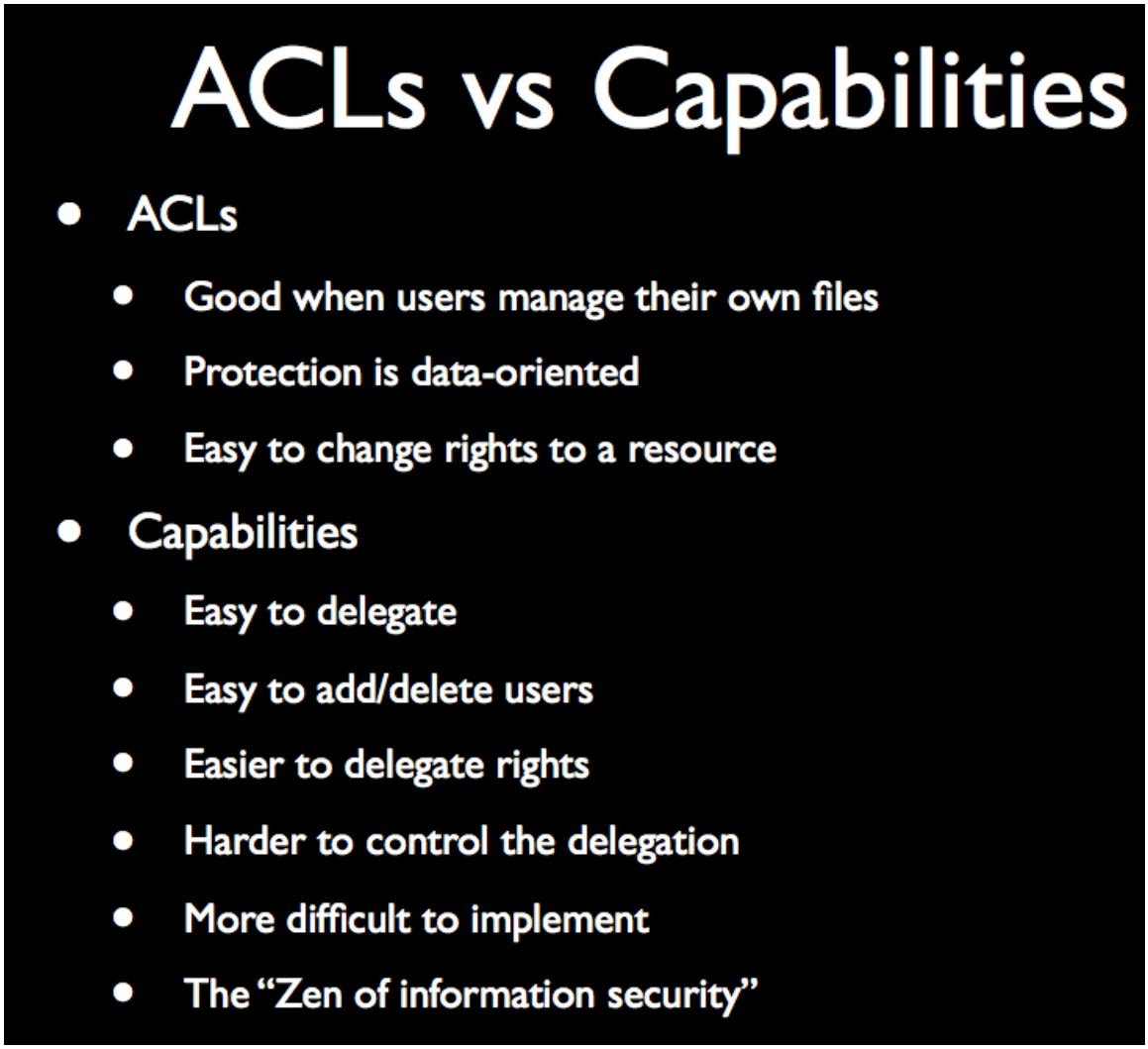
- As in real world, stated questions and/or accompanied descriptions in this quiz are often open-ended and one has to make assumptions in order to answer them. If you do make assumptions, state them clearly and explicitly.

- Don't panic if you feel like you are severely short on time. Everybody is. ☺

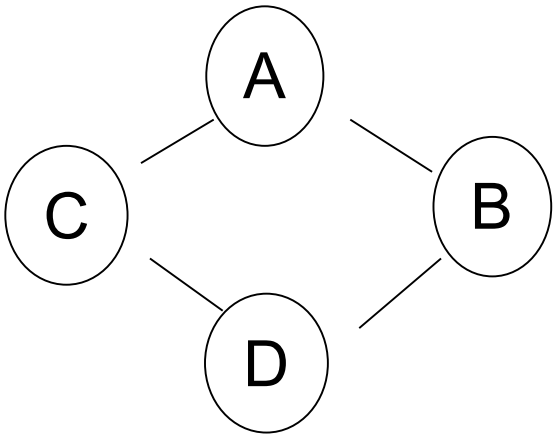
1. **(8 points) Explain what Subject, Object, PEP and PDP terms mean in Access Control (4 points out of 8), and how they interact with each other (other 4 points).**



2. (4 points) Compare ACLs and Capabilities (pros vs. cons)



3. (4 points) For the following BLP lattice



Fill out the pseudo-access matrix (follow the example for B x B):

		Objects			
		A	B	C	D
Subjects	A	WR	R	R	R
	B	W	RW	-	R
	C	W	-	WR	R
	D	W	W	W	RW

4. (5 points) What are the critical components of projects related to IT security?
Information flow, information at rest, backups, destruction, outsourcing (cloud, hosting, SaaS, etc.)

5. (3 points) Describe three main elements of responding to a security incident. Explain each element.

Deciding on (partially) shutting down services, restoring services, managing information flow.

6. (2 points) Which are more relevant threats for UBC IT assets, opportunistic or targeted? (b) Give examples of both types of threats that UBC faces.

(a) opportunistic,
(b) opportunistic -- compromising web portal platforms like Drupal and WordPress,
targeted -- phishing UBC CWL accounts in order to get access to paid journal subscriptions.

7. (6 points) Economic and organizational aspects of security

a) List the factors, forces, and phenomena from the field of economics that influence security of products and technologies on the market.

Network effects, high fixed costs and low marginal costs, the high costs of switching from one product or service to another, lead to dominant-firm markets.

Markets of lemons discourage companies from investing into secure product development.

Winners appeal to application developers in order to increase the network effect, and then lock developers and users through high costs of switching.

b) Why do big companies spend too much on security while small companies too little?

1) research shows an adverse selection effect:
- corporate security managers tend to be risk-averse people, often from accounting / finance
- more risk-loving people may become sales or engineering staff, or small-firm entrepreneurs

2) duediligence, government and insurance regulations have more stringed requirements for larger companies