Name: _____

Date: _____

Cornell University
Prison Education Program

Conceptual Physics
Reading Quiz 10

Due Date: May 4 (before class)

This reading assignment covers the material that we will discuss and work on next week. Our class activities will **assume** that you have read the assigned material, therefore it is **very important** that you do so to get the most out of the class!

1. *Light and Matter* Chapter 33 (Sections 1, 2 and 4)

   Pay attention to when probabilities are added and multiplied. In section 4, during the discussion of radioactive decay, what's most important is that you understand the notion of a *half-life*. Since we do not have calculators, we will not be using the mathematical operation of log that they do in example 3. You can skip the portion that derives this relation (rate of decay).

2. *Light and Matter* Chapter 34 (Sections 1 to 3)

   The key point in this chapter is the wave/particle duality as applied to light, and the main equation to focus on is the energy of a particle of light.

3. *Light and Matter* Chapter 35 (Section 1)

As part of the reading, please complete the pre-class quiz *before* coming to class. They will be collected at the very beginning.

Score: / 10 points

Questions for *Light and Matter* Chapter 33

1. (1 point) What is the source of most of Earth's heat?

2. (1 point) If something has probability 0 of occurring, is it something impossible or something that will definitely happen?

3. (1 point) What is the law of independent probabilities?

4. (1 point) What is the rule for calculating averages?

Questions for *Light and Matter* Chapter 34

1. (1 point) What is a photon?

2. (1 point) How is the energy of a photon related to its frequency (f) and Planck's constant (H)?

Questions for *Light and Matter* Chapter 35

1. (4 points) While both light and electrons (and protons, and neutrons) exhibit wave-particle duality, there are some important ways in which light and electrons differ. List 4.