Assignment 4

The due date for submitting this assignment has passed.

1. A highly concentrated reduction reagent is dissolved with reagent from a test-tube, and its color changes to light orange. Which of the following is the reason for this change?
   - Oxidation
   - Reduction
   - Dialysis
   Name: [Your Name]
   - Accepted
   - Additional attempts allowed
   [Your Attempt]

2. Which of the following best describes the probability of electron ejection from the gas phase at a particular energy? (You may refer to the attached image for help)
   - Boltzmann distribution
   - Maxwellian distribution
   - Fermi-Dirac distribution
   - Poisson distribution
   Name: [Your Name]
   - Accepted
   - Additional attempts allowed
   [Your Attempt]

3. No. Yes, the photon is transmitted. Reason:Accepted
   - Accepted
   - Additional attempts allowed
   [Your Attempt]

4. Which of the following is the number of photons per unit area and time in the beam? (You may refer to the attached image for help)
   - Photon flux density
   - Photon intensity
   - Photon absorption
   Name: [Your Name]
   - Accepted
   - Additional attempts allowed
   [Your Attempt]

5. What is the energy of the photon absorbed in the gas cell? (in joules)
   - [Your Attempt]
   - Accepted
   - Additional attempts allowed

6. What is the quantum yield of the gas present in the gas cell if the absorption cross-section of the gas is 0.3 x 10^(-20) m^2? (You may refer to the attached image for help)
   - [Your Attempt]
   - Accepted
   - Additional attempts allowed

7. An infrared detector is used to measure the temperature of a gas in a gas cell. What is the relation between the measured temperature and the gas temperature? (You may refer to the attached image for help)
   - [Your Attempt]
   - Accepted
   - Additional attempts allowed

8. A photomultiplier tube is used to detect light in a laboratory. What is the purpose of using a photomultiplier tube?
   - [Your Attempt]
   - Accepted
   - Additional attempts allowed

9. A solar cell is used to convert light into electrical energy. What is the conversion efficiency of a solar cell with an efficiency of 15%?
   - [Your Attempt]
   - Accepted
   - Additional attempts allowed

10. What is the maximum wavelength of light that can be detected by a photomultiplier tube with an efficiency of 15%? (You may refer to the attached image for help)
    - [Your Attempt]
    - Accepted
    - Additional attempts allowed