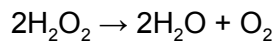


## CHEM 1310 Reading Day

### Chapters 7 and 8: Gases and *The Quantum Model of the Atom*

1. If 4.000 grams of hydrogen peroxide are placed within a sealed 250 mL container at 500 K, what is the pressure of the oxygen gas produced in atm?



2. Calculate the number of photons having a wavelength of 10.0  $\mu\text{m}$  required to produce 1.0 kJ of energy. Identify the type of electromagnetic radiation.
3. Identify the subshell in which electrons with the following quantum numbers are found:
  - a.  $n = 3, l = 2$
  - b.  $n = 1, l = 0$
  - c.  $n = 4, l = 3$
4. Write the noble gas electron configurations for the following atoms or ions:
  - a.  $\text{O}^-$
  - b. Ti
  - c.  $\text{Cl}^{3+}$
5. Which of the following combinations of quantum numbers is not allowed?

	$n$	$l$	$m_l$	$m_s$
a.	2	2	0	$+\frac{1}{2}$
b.	3	0	0	$-\frac{1}{2}$
c.	2	1	-1	$+\frac{1}{2}$
d.	4	3	-2	$-\frac{1}{2}$
e.	4	2	0	$+\frac{1}{2}$