

CH1012

Tutorial 1

Name:

1. What is the alkaline earth metal in the 4th period and how many **protons** and **electrons** does it have? Write down the **atomic symbol** for this element and include the **atomic number**.
2. Write down the **full electronic configuration** and the **valence electronic configuration** for each of the following: F, K⁺
3. The oxidation of carbon (graphite) to carbon monoxide occurs spontaneously at 375K. After reaction of the above system in a closed reaction vessel the equilibrium partial pressure of oxygen is 0.021 atm and that of carbon monoxide is 0.50 atm. Write down the expression for K_p and determine the value of K_p in the above system.
4.
$$3\text{O}_2(\text{g}) \rightleftharpoons 2\text{O}_3(\text{g}) \quad \Delta H^\circ = 286 \text{ kJ mol}^{-1}$$

In an equilibrium reaction mixture of the above reaction how would $p(\text{O}_2)$ and K_p change if the temperature of the reaction vessel were raised? Explain your answer.

5. What do you understand by the following?

(a) Colloid

(b) Electrical Double Layer

(c) The Tyndall effect