Che 111: Chapter 2 Practice Problems Key

1. According to the model presented in this chapter, all matter is composed of tiny _particles_____(1pt)
2. If the pistons and cylinders in your car engine get too hot, the pistons can get stuck in the cylinders, causing major damage to the engine. Why does this happen? (1 pt)
   The pistons can get stuck in the cylinders if the car engine gets too hot because as the temperature rises, the particles in the piston move faster causing the piston to expand. If the expansion of the pistons becomes too great, it can cause the piston to get stuck in the cylinder.
3. Write the chemical symbols that represent the following elements. (1pt)
   a. Hydrogen H
   b. Mercury Hg
4. Write the name of the group or family to which each of the following belongs. (1pt)
   a. Iodine Hallogen
   b. Xenon Nobel gas
5. Write the name and symbol for the elements that fit the following descriptions: (1pt)
   a. the noble gas in the fifth period Xenon, Xe
   b. the alkaline earth metal in the sixth period Barium, Ba
6. Identify each of the following as a cation or an anion, and determine the charge on each. (2pt)
   a. An iodine ion with 53 protons and 54 electrons anion, -1
   b. An iron ion with 26 protons and 23 electrons cation, +3
7. Write definitions of the terms atomic number and mass number. Which of these can vary without changing the element? Why? Which of these cannot vary without changing the element? Why? (4 pt)
   Atomic number- number of protons. Atomic mass- number of protons + number of neutrons. The atomic number cannot vary without changing the element because if the number of protons changes, the element changes.
8. Write the name and symbol for the elements that fit the following descriptions. (4pt)
   a. 78 protons in the nucleus of each atom. Platnium, Pt
   b. 42 electrons in each uncharged atom. Molybdenum, Mo
   c. 80 electrons in each +3 cation. Bismuth, Bi
   d. 18 electrons in each −2 anion. Sulfer, S