PHYS 312 Problems in Specification of Composition Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4.7 What is the composition, in atom percent, of an alloy that consists of 30 wt% Zn and 70 wt% Cu?

4.8 What is the composition, in weight percent, of an alloy that consists of 6 at% Pb and 94 at% Sn?

4.9 Calculate the composition, in weight percent, of an alloy that contains 218.0 kg titanium, 14.6 kg of aluminum, and 9.7 kg of vanadium.

4.10 What is the composition, in atom percent, of an alloy that contains 98 g tin and 65 g of lead?

4.16 Determine the approximate density of a high-leaded brass that has a composition of 64.5 wt% Cu, 33.5 wt% Zn, and 2.0 wt% Pb.

4.25 Silver and palladium both have the FCC crystal structure, and Pd forms a substitutional solid solution for all concentrations at room temperature. Compute the unit cell edge length for a 75 wt% Ag–25 wt% Pd alloy. The room-temperature density of Pd is 12.02 g/cm3, and its atomic weight and atomic radius are 106.4 g/mol and 0.138 nm, respectively.