

1. (7 points) **The Periodic Table**

Br is a (*metal*)(*nonmetal*)(*metalloid*) \_\_\_\_\_ and its name is \_\_\_\_\_. The element has \_\_\_\_\_ protons in the nucleus. An atom of Br has two isotopes,  $^{79}\text{Br}$  and  $^{81}\text{Br}$ . Which isotope is the more abundant \_\_\_\_\_? In the  $^{79}\text{Br}$  isotope, there are \_\_\_\_\_ neutrons in the nucleus. The element is found in Group \_\_\_\_\_. The common name of the Group is \_\_\_\_\_.

2. (9 points) **Naming Compounds**—fill in the blanks in the table

Cation	Anion	Name	Formula
1. $\text{NH}_4^+$		Ammonium carbonate	
2.		Nickel(II) phosphate	
3. $\text{Ca}^{2+}$	$\text{I}^-$		
4. $\text{Al}^{3+}$			$\text{Al}(\text{OH})_3$

## 3. (3 points) Fill in the blank or circle the correct answer.

- (a) A beaker has a volume of 800 mL. The volume in liters is \_\_\_\_\_ L
- (b) The aluminum piece you used in the lab had a mass of 932 mg. Its mass in grams is \_\_\_\_\_g
- (c) Two beakers contain a hot liquid. Which has the higher temperature?
- (i) Water at 92 °C
- (ii) Mercury at 325 K

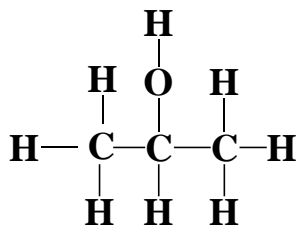
4. (3 points) The density of titanium is  $4.54 \text{ g/cm}^3$  (at 25 °C). If you use a piece of the metal with a volume of  $0.150 \text{ cm}^3$ , what amount of titanium have you used?

- (a) 0.0142 mol
- (b) 0.632 mol
- (c) 1.58 mol
- (d) 32.6 mol
- (e) None of the above

5. (3 points) Which sample contains the greatest number of atoms?

- (a) A sample of Cr that contains  $5.77 \times 10^{24}$  atoms
- (b) 5.87 mole of Al
- (c) 120. g of C
- (c) They all have the same number of atoms.

6. (5 points) Isopropyl alcohol is a common compound in the class of organic compounds known as alcohols. (You know it as rubbing alcohol.)



- (a) The formula of the compound is C\_\_\_H\_\_\_O\_\_\_ and its molar mass is \_\_\_\_\_
- (b) Suppose you have a bottle of isopropyl alcohol containing 250. mL of liquid isopropyl alcohol. What amount of isopropyl alcohol (moles) do you have? (Density of isopropyl alcohol = 0.781 g/mL),  
*Show your work clearly and completely. No credit if you do not demonstrate how you arrived at your answer.*