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, $^{79}$Br and $^{81}$Br. Which isotope is the more abundant __________? In the $^{79}$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

<table>
<thead>
<tr>
<th>Cation</th>
<th>Anion</th>
<th>Name</th>
<th>Formula</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. NH$_4^+$</td>
<td></td>
<td>Ammonium carbonate</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td>Nickel(II) phosphate</td>
<td></td>
</tr>
<tr>
<td>3. Ca$^{2+}$</td>
<td>I$^-$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Al$^{3+}$</td>
<td></td>
<td></td>
<td>Al(OH)$_3$</td>
</tr>
</tbody>
</table>

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 g/cm$^3$ (at 25 °C). If you use a piece of the metal with a volume of 0.150 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 \(\text{C}_\text{---}\text{H}_\text{---}\text{O}_\text{---}\) 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 you work clearly and completely. No credit if you do not demonstrate how you arrived at your answer.