**SI WORKSHEET 3**

1. Fill in the Blanks. (All are ions)

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| Formula | Name | Charge of the ion |
| NO3 | Nitrate | -1 |
| ClO4 | Perchlorate | -1 |
| ClO3 | Chlorate | -1 |
| NH4 | Ammonium | +1 |
| SO4 | Sulfate | -2 |
| SO3 | Sulfite | -2 |
| PO4 | Phosphate | -3 |
| PO3 | Phosphite | -3 |
| H3O | Hydronium | +1 |
| OH | hydroxide | -1 |

1. Name or give formula for following compounds or ions:

|  |  |
| --- | --- |
| Name | Formula |
| Manganese (IV) Oxide | MnO2 |
| Copper (II) oxide | CuO |
| Copper (II) chloride  | CuCl2 |
| Carbon tetrachloride | CCl4 |
| Ammonium phosphate | (NH4)3PO4 |
| Sodium Sulfate | Na2SO4 |
| Phosphorus trichloride | PCl3 |
| Sodium nitride | Na3N |
| Aluminum phosphate | AlPO4 |
| Acetate | CH3COO- |
| Thiosulfate | S2O32- |
| Dichromate | Cr2O72- |
| Carbonate | CO32- |
| Copper (II) Sulfate | CuSO4 |

1. What is the common charge of the following atoms when they form ions/have charges? Na, Ag, Br, O, Zn, B, P, and Ca? (in respective order): +1, +1, -1, -2, +2, +3, -3, +2
2. Compound has the formula AO, which of the following compounds could be substituted for A? (Ca, H, Na, Sr). Sr and Ca because both have a +2 charge that would balance out the – charge on oxygen
3. Consider silica, or silicon dioxide, SiO2. What is the charge on the Si? +4
4. Which of these is not a valid chemical formula? CuSO4, Cu2SO4, Al3O2, or OF2?
5. What is the percent composition of oxygen in Calcium phosphate? 41.2% (128/310)
6. What is the percent composition of water in Copper (II) sulfate pentahydrate? What about the % of oxygen? 36.06% water (90/249.55), 57.7% oxygen (144/249.55)
7. Which of these has the strongest force of attraction of the following: Sodium oxide, Magnesium sulfide, Sodium iodide, or Aluminum phosphate? Aluminum phosphate
8. What is an electrolyte? Why is HCl and electrolyte while Carbon tetrachloride is not?

Electrolyte is a compound that conducts electricity when dissolved in water, ionic compounds are electrolytes because they break down into ions. Most molecular compounds are not electrolytes because they do not form ions and may be nonpolar. HCl is an electrolyte because when dissolved in water it forms Hydrochloric acid which is a strong acid= it breaks down into ions when in water. CCl4 is a nonelectrolyte because not only does it not dissolve in water but it is nonpolar and does not form ions.