

4. Write formulas for the following ionic compounds.

- a. sodium phosphate Na_3PO_4 c. sodium hydroxide NaOH e. ammonium chloride NH_4Cl
 b. magnesium sulfate MgSO_4 d. potassium cyanide KCN f. potassium dichromate $\text{K}_2\text{Cr}_2\text{O}_7$

5. Write formulas for compounds formed from these pairs of ions.

- a. NH_4^+ , SO_4^{2-} $(\text{NH}_4)_2\text{SO}_4$ c. barium ion and hydroxide ion $\text{Ba}(\text{OH})_2$
 b. K^+ , NO_3^- KNO_3 d. lithium ion and carbonate ion Li_2CO_3

6. Name the following compounds.

- a. NaCN Sodium cyanide c. Na_2SO_4 Sodium Sulfate e. $\text{Cu}(\text{OH})_2$ Copper(II) Hydroxide
 b. FeCl_3 Iron(III) chloride d. K_2CO_3 Potassium Carbonate f. LiNO_3 Lithium Nitrate

7. Name and give the charge of the metal cation in each of the following ionic compounds.

- a. Na_3PO_4 Sodium (Na^+) c. CaS Calcium (Ca^{2+}) e. FeCl_3 Iron (Fe^{3+})
 b. NiCl_2 Nickel (Ni^{2+}) d. K_2S Potassium (K^+) f. CuI Copper (Cu^+)

SECTION 9.3 NAMING AND WRITING FORMULAS FOR MOLECULAR COMPOUNDS

1. Name the following molecular compounds.

- a. PCl_5 phosphorus pentachloride c. NO_2 nitrogen dioxide e. P_4O_6 tetraphosphorus hexoxide g. SiO_2 silicon dioxide
 b. CCl_4 carbon tetrachloride d. N_2F_2 dinitrogen difluoride f. XeF_2 xenon difluoride h. Cl_2O_7 dichlorine heptoxide

2. Write the formulas for the following binary molecular compounds.

- a. nitrogen tribromide NBr_3 c. sulfur dioxide SO_2
 b. dichlorine monoxide Cl_2O d. dinitrogen tetrafluoride N_2F_4

SECTION 9.4 NAMING AND WRITING FORMULAS FOR ACIDS AND BASES

1. Name the following compounds as acids.

- a. HNO_2 nitrous b. H_2SO_4 sulfuric c. HF hydrofluoric d. H_2CO_3 carbonic

2. Write the formulas for the following bases.

- a. calcium hydroxide $\text{Ca}(\text{OH})_2$ c. aluminum hydroxide $\text{Al}(\text{OH})_3$
 b. ammonium hydroxide NH_4OH d. lithium hydroxide LiOH

SECTION 9.5 THE LAWS GOVERNING FORMULAS AND NAMES

1. Write the formulas for these compounds.

- a. potassium sulfide K_2S e. hydrobromic acid HBr i. sulfur hexafluoride SF_6
 b. tin(IV) chloride SnCl_4 f. aluminum fluoride AlF_3 j. magnesium chloride MgCl_2
 c. hydrosulfuric acid H_2S g. dinitrogen pentoxide N_2O_5 k. phosphoric acid H_3PO_4
 d. calcium oxide CaO h. iron(III) carbonate $\text{Fe}_2(\text{CO}_3)_3$ l. nitric acid HNO_3