17. Name each of the following ions:

a. NH_4^+
b. ClO_3^-
c. OH^-
d. SO_4^{2-}
e. NO_3^-
f. CO_3^{2-}
g. PO_4^{3-}
h. CH_3COO^-
i. HCO_3^-
j. CrO_4^{2-}

18. Write the formula and charge for each of the following ions:

a. ammonium ion
b. acetate ion
c. hydroxide ion
d. carbonate ion
e. sulfate ion
f. phosphate ion
g. copper(II) ion
h. tin(II) ion
i. iron(III) ion
j. copper(I) ion
k. mercury(I) ion
l. mercury(II) ion

Oxidation Numbers

SECTION 2 REVIEW

19. Name each of the following ions according to the Stock system:

a. Fe^{2+}
b. Fe^{3+}
c. Pb^{2+}
d. Pb^{4+}
e. Sn^{2+}
f. Sn^{4+}

20. Name each of the binary molecular compounds in item 11 by using the Stock system.

21. Write formulas for each of the following compounds:

a. phosphorus(III) iodide
b. sulfur(II) chloride
c. carbon(IV) sulfide
d. nitrogen(V) oxide

22. a. What are oxidation numbers?
b. What useful functions do oxidation numbers serve?

PRACTICE PROBLEMS

23. Name each of the following ionic compounds by using the Stock system:

a. NaCl
b. KF
c. CaS
d. $Co(NO_3)_2$
e. $FePO_4$
f. Hg_2SO_4
g. $Hg_3(PO_4)_2$

24. Assign oxidation numbers to each atom in the following compounds. (Hint: See Sample Problem E.)

a. HI
b. PBr_3
c. GeS_2
d. KH
e. As_2O_5
f. H_3PO_4

25. Assign oxidation numbers to each atom in the following ions. (Hint: See Sample Problem E.)

a. NO_3^-
b. ClO_4^-
c. PO_4^{3-}
d. $Cr_2O_7^{2-}$
e. CO_3^{2-}

Using Chemical Formulas

SECTION 3 REVIEW

26. a. Define *formula mass.*
b. In what unit is formula mass expressed?

27. What is meant by the molar mass of a compound?

PRACTICE PROBLEMS

28. Determine the formula mass of each of the following compounds or ions. (Hint: See Sample Problem F.)

a. glucose, $C_6H_{12}O_6$
b. calcium acetate, $Ca(CH_3COO)_2$
c. the ammonium ion, NH_4^+
d. the chlorate ion, ClO_3^-

29. Determine the number of moles of each type of monatomic or polyatomic ion in one mole of the following compounds. For each polyatomic ion, determine the number of moles of each atom present in one mole of the ion.

a. KNO_3
b. Na_2SO_4
c. $Ca(OH)_2$
d. $(NH_4)_2SO_3$
e. $Ca_3(PO_4)_2$
f. $Al_2(CrO_4)_3$