## Answers to problems 33 and 34, 35 in page 294.

33. a. 
$$4\text{Fe} + 3\text{O}_2 \longrightarrow 2\text{Fe}_2\text{O}_3$$

**b.** 
$$2H_2O_2 \rightarrow 2H_2O + O_2$$

c. 
$$2C_8H_{18} + 25O_2 \rightarrow 16CO_2 + 18H_2O$$

d. 
$$2Al + 3F_2 \rightarrow 2AlF_3$$

**34. a.** 
$$2C_3H_7OH + 9O_2 \rightarrow 6CO_2 + 8H_2O$$

**b.** 
$$2Al + 3Fe(NO_3)_2 \rightarrow 2Al(NO_3)_3 + 3Fe$$

c. 
$$2\text{Fe}(OH)_3 \longrightarrow \text{Fe}_2O_3 + 3\text{H}_2O$$

d. 
$$2PbO_2 \rightarrow 2PbO + O_2$$

35. a. 
$$Zn + Pb(NO_3)_2 \longrightarrow Pb + Zn(NO_3)_2$$

**b.** 
$$NH_4CH_3COO + AgNO_3 \rightarrow NH_4NO_3 + AgCH_3COO$$

c. 
$$H_2C_2O_4 + 2NaOH \rightarrow Na_2C_2O_4 + 2H_2O$$

d. 
$$2AI + 3CuSO_4 \rightarrow Al_2(SO_4)_3 + 3Cu$$

**36. a.** 
$$CuSO_4 + (NH_4)_2S \longrightarrow CuS + (NH_4)_2SO_4$$

**b.** 
$$2HNO_3 + Ba(OH)_2 \longrightarrow 2H_2O + Ba(NO_3)_2$$

c. 
$$Fe(NO_3)_3 + 3LiOH \rightarrow 3LiNO_3 + Fe(OH)_3$$

d. 
$$3BaCl_2 + 2H_3PO_4 \longrightarrow Ba_3(PO_4)_2 + 6HCl$$