Answers to problems 37-40 in page 296

37. a.
$$2Zn + O_2 \longrightarrow 2ZnO$$

b.
$$F_2 + Mg \longrightarrow MgF_2$$

c.
$$Cl_2 + 2K \longrightarrow 2KCl$$

d.
$$H_2 + I_2 \rightarrow 2HI$$

38. a.
$$2\text{HgO} \rightarrow 2\text{Hg} + \text{O}_2$$

b.
$$2H_2O \rightarrow 2H_2 + O_2$$

c.
$$2AgCl \rightarrow 2Ag + Cl_2$$

d.
$$2KOH \rightarrow K_2O + H_2O$$

39. a.
$$2C_3H_6 + 9O_2 \rightarrow 6CO_2 + 6H_2O$$

b.
$$C_5H_{12} + 8O_2 \longrightarrow 5CO_2 + 6H_2O$$

c.
$$2CH_3OH + 3O_2 \rightarrow 2CO_2 + 4H_2O$$

d.
$$C_{12}H_{22}O_{11} + 12O_2 \rightarrow 12CO_2 + 11H_2O$$

40. a. combustion;
$$C_3H_8 + 5O_2 \rightarrow 3CO_2 + 4H_2O$$

c. synthesis;
$$2Mg + O_2 \rightarrow 2MgO$$

f. combustion;
$$C_2H_5OH + 3O_2 \rightarrow 2CO_2 + 3H_2O$$