Reaction Prediction — 3

Write formulas for the reactants and predicted products for the chemical reactions that follow. Assume that in all cases a reaction occurs. The equation does not need to be balanced. Descriptive symbols do not need to be included. Write all substances in their proper form—as ions if appropriate—and cancel any spectator ions. Assume that the reactions are in aqueous solution unless otherwise stated.

a) A piece of aluminum metal is added to a solution of silver nitrate.

b) A piece of solid bismuth is heated strongly in oxygen.

c) Solid ammonium carbonate is heated.

d) Propanol is burned completely in air.

e) Equal volumes of 0.1 M sulfuric acid and 0.1 M potassium hydroxide are mixed.

f) An excess of sodium hydroxide solution is added to a solution of magnesium nitrate.

g) Solid lithium hydride is added to water.

h) A concentrated solution of ammonia is added to a solution of zinc iodide.

Reaction Prediction — 4

Write formulas for the reactants and predicted products for the chemical reactions that follow. Assume that in all cases a reaction occurs. The equation does not need to be balanced. Descriptive symbols do not need to be included. Write all substances in their proper form—as ions if appropriate—and cancel any spectator ions. Assume that the reactions are in aqueous solution unless otherwise stated.

a) Concentrated hydrochloric acid is added to solid manganese(II) sulfide.

b) Excess chlorine gas is passed over hot iron filings.

c) Water is added to a sample of solid magnesium nitride.

d) A solid sample of magnesium carbonate is heated strongly.

e) Ethene (ethylene) gas is bubbled through a solution of bromine.

f) Dilute hydrochloric acid is added to a solution of potassium sulfite.

g) An excess of nitric acid solution is added to a solution of tetraamminecopper(II) sulfate.

h) A piece of nickel metal is immersed in a solution of copper(II) sulfate.