Series 5

Exercise

Predict the products for the following reactions. Write the balanced equations, determine whether or not the reactions are precipitation reactions, and identify the precipitate. Write the complete and net ionic equations for all precipitation reactions that are present.

- a. $Ba(NO_3)_{2(aq)} + NaCl_{(aq)} \rightarrow$
- $b. \quad Na_2S_{(aq)} + \ Cu(NO_3)_{2(aq)} \ \rightarrow$
- c. $NH_4Cl + Pb(NO_3)_{2(aq)} \rightarrow$
- d. $MgSO_4 + BaCl_2 \rightarrow$
- e. $KNO_3 + BaCl_2 \rightarrow$

Exercise2:

Complete and balance each of the following equations. Identify the acid and the base in each reaction, and write the complete and net ionic equations.

- a. $H_2SO_{4 (aq)} + Ca(OH)_2 \rightarrow$
- b. $HClO4_{(aq)} + NaOH_{(aq)} \rightarrow$
- c. $HBr_{(aq)} + HBr_{(aq)} \rightarrow$
- d. $HNO_{3(aq)} + Al(OH)_{3(aq)} \rightarrow$
- e. $CH_3CO_2H_{(aq)} + KOH_{(aq)} \rightarrow$

exercise3:

- 1. Give the oxidation number for chlorine in each of the following molecules:
- a. HClO
- b. HClO₃
- c. ClO₄
- 2. Give the oxidation number for nitrogen in each of the following molecules:
- a. N_2
- b. N_2H_4
- c. NH₄⁺
- 3. Balance each of the following redox reactions. Assign each atom an oxidation number. Determine which is being oxidized and which is being reduced.
- a. $Na_{(s)} + S_{(s)} \rightarrow Na_2S_{(s)}$
- b. $Mg_{(s)} + O_{2(g)} \rightarrow MgO_{(s)}$
- c. $Ca_{(s)} + F_{2(g)} \rightarrow CaF_{2(s)}$
- d. $Fe_{(s)} + Cl_{2(g)} \rightarrow FeCl_{3(s)}$
- e. $FeO_{(s)} + O_{2(g)} + H_2O_{(l)} \rightarrow Fe(OH)_{3(s)}$

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