Use these questions and the test-taking tip to prepare for your standardized test.

1. Potassium chromate and lead(II) acetate are both dissolved in a beaker of water, where they react to form solid lead(II) chromate. What is the balanced net ionic equation describing this reaction?

a. $Pb^{2+}(aq) + C_2H_3O_2^-(aq) \rightarrow Pb(C_2H_3O_2)_2(s)$
b. $Pb^{2+}(aq) + 2CrO_4^-(aq) \rightarrow Pb(CrO_4)_2(s)$
c. $Pb^{2+}(aq) + CrO_4^{2-}(aq) \rightarrow PbCrO_4(s)$
d. $Pb^+(aq) + C_2H_3O_2^-(aq) \rightarrow PbC_2H_3O_2(s)$

2. What type of reaction is described by the following equation?

$Cs(s) + H_2O(l) \rightarrow CsOH(aq) + H_2(g)$

a. synthesis
b. combustion
c. decomposition
d. replacement

3. Which of the following reactions between halogens and halide salts will occur?

a. $F_2(g) + FeI_2(aq) \rightarrow FeF_2(aq) + I_2(l)$
b. $I_2(s) + MnBr_2(aq) \rightarrow MnI_2(aq) + Br_2(g)$
c. $Cl_2(s) + SrF_2(aq) \rightarrow SrCl_2(aq) + F_2(g)$
d. $Br_2(l) + CoCl_2(aq) \rightarrow CoBr_2(aq) + Cl_2(g)$

Interpreting Tables Use the table to answer questions 4–6.

Physical Properties of Select Ionic Compounds

Compound	Name	Physical state at room temp.	Soluble in water?	Melting point (°C)
$NaClO_3$	sodium chlorate	solid	yes	248
Na_2SO_4	sodium sulfate	solid	yes	884
$NiCl_2$	nickel(II) chloride	solid	yes	1009
$Ni(OH)_2$	nickel(II) hydroxide	solid	no	230
$AgNO_3$	silver nitrate	solid	yes	212

4. An aqueous solution of nickel(II) sulfate is mixed with aqueous sodium hydroxide. Will a visible reaction occur?

a. No, solid nickel(II) hydroxide is soluble in water.
b. No, solid sodium sulfate is soluble in water.
c. Yes, solid sodium sulfate will precipitate out of solution.
d. Yes, solid nickel(II) hydroxide will precipitate out of solution.

5. When $AgClO_3(aq)$ and $NaNO_3(aq)$ are mixed,

a. no visible reaction occurs.
b. solid $NaClO_3$ precipitates out of solution.
c. NO_2 gas is released from the reaction.
d. solid Ag metal is produced.

6. Finely ground nickel(II) hydroxide is placed in a beaker of water. It sinks to the bottom of the beaker and remains unchanged. An aqueous solution of hydrochloric acid (HCl) is then added the beaker, and the $Ni(OH)_2$ disappears. Which of the following equations best describes what occurred in the beaker?

a. $Ni(OH)_2(s) + HCl(aq) \rightarrow NiO(aq) + H_2(g) + HCl(aq)$
b. $Ni(OH)_2(s) + 2HCl(aq) \rightarrow NiCl_2(aq) + 2H_2O(l)$
c. $Ni(OH)_2(s) + 2H_2O(l) \rightarrow NiCl_2(aq) + 2H_2O(l)$
d. $Ni(OH)_2(s) + 2H_2O(l) \rightarrow NiCl_2(aq) + 3H_2O(l) + O_2(g)$

7. The combustion of ethanol, C_2H_6O, produces carbon dioxide and water vapor. What equation best describes this process?

a. $C_2H_6O(l) + O_2(g) \rightarrow CO_2(g) + H_2O(l)$
b. $C_2H_6O(l) \rightarrow 2CO_2(g) + 3H_2O(l)$
c. $C_2H_6O(l) + 3O_2(g) \rightarrow 2CO_2(g) + 3H_2O(g)$
d. $C_2H_6O(l) \rightarrow 3O_2(l) + 2CO_2(g) + 3H_2O(l)$

8. What is the product of this synthesis reaction?

$Cl_2(g) + 2NO(g) \rightarrow ?$

a. NCl_2
b. 2NOCl
c. N_2O_2
d. 2ClO

TEST-TAKING TIP

Tables If a test question involves a table, skim the table before reading the question. Read the title, column heads, and row heads. Then read the question and interpret the information in the table.