Net Ionic Equations & Precipitation

STUDENT PRACTICE WORKSHEET

Name: _____ Date: _____

Directions: Circle the best answer for 1–6. Show your full reasoning and units for 7–8. Compare with the separate key after completing the page.

Part A — Concept checks

1. **Which ions are spectators in $AgNO_3 + NaCl \rightarrow AgCl + NaNO_3$?**

   A. Ag^+ and Cl^- B. Na^+ and NO_3^- C. Ag^+ and NO_3^- D. Cl^- and Na^+

2. **Which substance is not dissociated in a complete ionic equation?**

   A. $NaNO_3(aq)$ B. $KCl(aq)$ C. $AgCl(s)$ D. $Ca(NO_3)_2(aq)$

3. **Which substance is generally soluble in water?**

   A. $AgCl$ B. $BaSO_4$ C. $NaNO_3$ D. $PbCl_2$

4. **A valid net ionic equation must balance…**

   A. atoms only B. charge only C. atoms and charge D. neither

5. **What is the net ionic equation for HCl(aq) + NaOH(aq)?**

   A. $H^+ + OH^- \rightarrow H_2O$ B. $Na^+ + Cl^- \rightarrow NaCl(s)$ C. $HCl + NaOH \rightarrow NaCl(s)$ D. $H_2 + O_2 \rightarrow H_2O$

6. **What remains after spectator ions are cancelled?**

   A. the unbalanced reaction B. the total ionic equation C. only species involved in net chemical change D. all dissolved ions

Part B — Application and explanation

7. Mix aqueous $AgNO_3$ and NaCl. Write the net ionic equation.

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8. Explain why this guideline matters, with an example of what could go wrong if you ignore it: A solid precipitate stays intact in an ionic equation. Cancelling a reacting ion is not allowed.

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REFERENCE RELATIONSHIP

molecular → complete ionic → cancel spectators → net ionic