## Chemistry 11 **Solution Practice Test**

Name: Date: Block:

- 1. During a lab activity, you dilute 45 mL of a 8.5 M HCl solution to a final volume of 120 mL. What is the resulting HCl concentration?
  - a. 2.3 M
  - b. 3.2 M
  - c. 5.1 M
  - d. 23 M
- 2. Which of the following equations correctly represents the dissociation of calcium chloride in water?
  - a.  $CaCl_{(aq)} \rightarrow Ca^{+}_{(aq)} + Cl^{-}_{(aq)}$
  - b.  $CaCl_{2(aq)} \rightarrow Ca^{2+}(aq) + Cl^{-}(aq)$
  - c.  $CaCl_{2(aq)} \rightarrow Ca^{2+}(aq) + 2Cl^{-}(aq)$
  - d.  $CaCl_{2(aq)} + H_2O \rightarrow Ca^{2+}_{(aq)} + 2Cl_{(aq)}$
- 3. When added to a solution containing Mg<sup>2+</sup>, which anion will create a precipitate?
  - a.  $NO_3$
  - b. Cl-
  - c. OH-
  - d. S2-
- 4. When added to an iron (III) iodide solution, which of the following compounds will create a precipitate?
  - a. cesium nitrate
  - b. hydrochloric acid
  - c. copper (II) sulphate
  - d. ammonium hydroxide
- 5. How many mL of 0.550 M NaOH would be required to titrate 25.0 mL of a 0.388 M solution of hydrochloric acid?
  - a. 17.6 mL
  - b. 25.0 mL
  - c. 35.4 mL
  - d. 46.9 mL
- 6. A student must prepare a 3.00 L solution of 0.750 M NaOH. She is given a stock solution of 12.0 M NaOH.
  - a. What volume of stock solution is needed to prepare the final solution?

b. What volume of water was added to prepare the final solution?

7.	$MnSO_4$ was dissolved in water. What is the ionization equation?
8.	A chemist mixes a 225 mL of a 3.8 M $Na_2CO_3$ solution with 3.8 g of $K_2CO_3$ . What is the concentration of each ion in this solution?
9.	For the following solutions, use a flow chart to describe the process of separating the ions from each other. $a. Mg^{2+},Pb^{2+}andZn^{2+}$
	b. OH-, PO <sub>4</sub> 3-, S <sup>2-</sup>

10. Predict the products in the following reactions. Then, balance the equations. Be sure to indicate the state (aq or s), of each product.

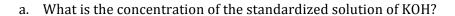
a. \_\_\_\_ CaCl<sub>2 (aq)</sub> + \_\_\_\_ KNO<sub>3 (aq)</sub> 
$$\rightarrow$$

11.	<ol> <li>Write a formula equation, complete ionic equation and net ionic equation for the following reactions:</li> <li>a. Strontium hydroxide and zinc chloride</li> </ol>							
	a.	Strontium nyuroxiue anu zinc	Cinoriue					
	b.	Ammonium bromide and cop	per (I) sulphate					
12.	12. Determine whether the following are soluble or have low solubility.							
	a.	Barium chloride	soluble / low solubility (circle one)					
	b.	Sn(OH) <sub>4</sub>	soluble / low solubility (circle one)					
13.	13. A titration was performed that required 12.7 mL of 0.150 M Mg(OH) <sub>2</sub> to titrate 25.00 mL of a hydrochloric acid, HCl, solution. Determine the molarity of the hydrochloric acid.							

14. Consider the following results from a titration lab.

4.50~g of KOH was dissolved to make a 100.~mL solution Below is the volume of the KOH solution needed to neutralize 15.0~mL H $_3PO_4$ .

	Trial #1	Trial #2	Trial #3	Trial #4
Initial reading of burette (mL)	2.56	8.95	13.35	17.55
Final reading of burette (mL)	8.95	13.35	17.55	21.75
Volume of KOH (mL)				



b. What was the average volume of KOH was needed? (Only use data from three trials!!)

c. What is the concentration of the acid?