

Chem 201 Self Quiz #1

Select the letter of the best answer for each of the following questions.

1. What is the molarity of the solution which contains 5.0 g of NaOH (formula weight = 40 g/mole) dissolved in water to make 200 mL of solution?

- a. 0.025 M
- b. 0.13 M
- c. 0.20 M
- d. 0.63 M
- e. 1.6 M

2. What is the weight percent of NaCl in a solution made by dissolving 20 g of NaCl (FW = 58 g/mole) in 200 mL of water?

- a. 0.16%
- b. 0.17%
- c. 9.1%
- d. 10%
- e. 17%

3. When 40.0 mL of 2.0 M NaCl (FW = 58) is diluted to 100.0 mL, what is the new concentration?

- a. 0.20 M
- b. 0.50 M
- c. 0.80 M
- d. 5.0 M
- e. need more information to answer this question

4. How many moles of NaOH (FW = 40 g/mole) are there in 50 mL of 0.30 M NaOH solution?

- a. 0.006
- b. 0.015
- c. 0.60
- d. 6
- e. 15

5. What is the species concentration of Na^+ in a 0.50 M solution of Na_2SO_4 ?

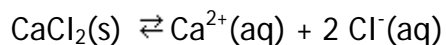
- a. 0.20 M
- b. 0.25 M
- c. 0.50 M
- d. 1.0 M
- e. 2.0 M

6. How many moles of chloride ion are there in 100 mL of 0.50 M AlCl_3 ?

- a. 0.050
- b. 0.10
- c. 0.15
- d. 0.5
- e. 1.5

Answer the following questions.

7. What is the appropriate equilibrium constant expression for this reaction?



8. If the solubility of CaCl_2 is 74.5 g in 100 mL, what are the species concentrations of Ca^{2+} and Cl^{-} and what is the value of K_{sp} for CaCl_2 ?

9. Solid SrSO_4 is shaken with a 0.0010 M K_2SO_4 solution until equilibrium, whereupon it is found that the solution contains 0.042 g SrSO_4 /L. Calculate the solubility product of SrSO_4 .