Solutions and Solubility – Study Guide

*Sections 11.2 and 11.3 in OpenStax*

**Electrolytes**

Explain the difference between a strong electrolyte, a weak electrolyte and a nonelectrolyte:

When ionic compounds dissolve in water, the ions \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

This process is called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Solubility**

Explain the difference between a saturated, unsaturated and supersaturated solution:

The solubility of sodium acetate is 46.4 g/100 mL water at 20oC. Describe each of the following

solutions as unsaturated, saturated or supersaturated.

49.3 g/100 mL \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

21.6 g/100 mL \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

46.4 g/100 mL \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The primary rule of solubility is “Like dissolves like,” which originates from the idea that a polar solute is more likely to dissolve in a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (*polar, nonpolar*) solvent.

***Watch video tutorial on Blackboard***

Which of the following compounds would you expect to dissolve in water?

HI KCl CH3OH Br2 CBr4 CO

Which of the following compounds would you expect to dissolve in pentane, C5H12?

CaI2 H2O BF3 CH3CH2CH2CH3 CO2

Solubility of gases generally \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (*increases, decreases*) with increasing temperature.

Solubility of solids generally \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (*increases, decreases*) with increasing temperature.

**End of Chapter 11 Practice Problems**

#1, 5, 9, 11, 15, 23

For detailed solutions to these problems, go to the [OpenStax website](https://openstaxcollege.org/textbooks/chemistry/resources) and download the “Student Answer and Solution Guide.”