

Chemistry 30
Unit 4: Solutions
Assignment 2

1. Which substance would be the solute and which is the solvent in the following:

	Solute	Solvent
a) salt water	<u> salt </u>	<u> water </u>
b) water vapour in the air	<u> water vapour </u>	<u> air </u>
c) a brass alloy containing 75% copper and 25% zinc	<u> zinc </u>	<u> copper </u>

2. What is the difference between “rate of solution” and “solubility”?

Rate of solution – how fast a substance dissolves

Solubility – a measure of how much solute dissolves

3. How does increasing the temperature affect

- a) the solubility of most solids and liquids

As temperature increases, the solubility of most solids and liquids increases.

- b) the solubility of gases

As temperature increases, the solubility of gases decreases.

4. How does increasing the pressure affect
- a) the solubility of most solids and liquids

no effect

- b) the solubility of gases

The solubility of gases increases as pressure increases.

5. What does the term “hydration” mean with respect to the solution process?

A specific definition may refer to **Hydration occurring when polar water molecules surround the ions in a solution.**

In more general terms, **hydration refers to the chemical combination of water with other substances.**

6. Do some research on **one** of the following topics. Answer the questions given below for your topic. Your answers should not be longer than a page.

Write your answers in point form, rather than paragraphs. This is to help you learn to summarize information, rather than copy information directly from your reference material.

Student answers will vary.

Topic A. Do some research on “the bends”, a serious problem that can arise during scuba diving. Answer the following questions:

- a) Write a short paragraph that provides a simple description of the bends, including what causes it and how to avoid it. Be sure to name the gas that is involved.
- b) What medical treatment is used for a diver that does get the bends?
- c) Give two other names for the bends.
- d) Provide the reference(s) for your information.

Topic B. Potash mining is an important industry in Saskatchewan.

- a) What is potash (it’s chemical make-up)? How did it form?
- b) What is potash used for?
- c) Where in Saskatchewan does potash mining occur? List several places.
- d) Provide the reference(s) for your information.