

## Chapter 14 Worksheet 1 (Solution Formation)

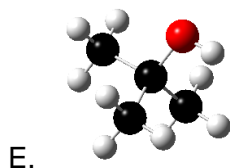
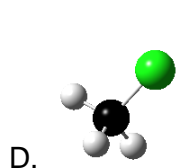
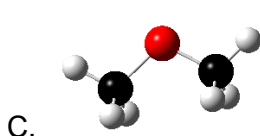
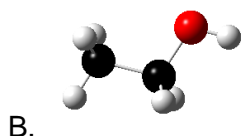
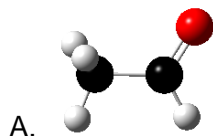
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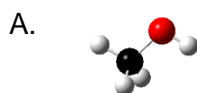
### Instructions:

- Please enter your first and last name as it appears on the eLC roster (do not use a nickname).
- Your UGA myID is a combination of letters and numbers (example: mine is sre13137). **Do not use your 81x number.**
- If you do not have a printer, type your answers in the then upload the worksheet template to Gradescope by Friday, September 25 at 11:59 p.m. Write your work on separate sheets of paper, convert to a PDF and upload to eLC.
- If you have a printer download the worksheet, convert it to a PDF and upload to Gradescope by Friday, September 25 at 11:59 p.m. You do not need to upload anything to eLC.

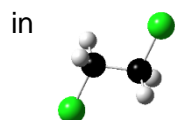
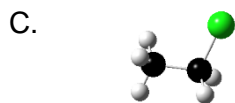
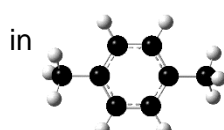
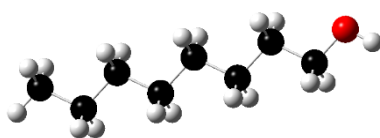
1. Which one of the following would you expect to be **most** soluble in water?



2. Of the solvent/solute pairs given, which of the solutes would you expect to be least soluble in the solvent?



in



3. A dynamic equilibrium is established where some solute dissolves and other solute precipitates.



The solution is said to be \_\_\_\_\_.

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- A. Concentrated
- B. Saturated
- C. Strong
- E. Supersaturated

4. Copper(II) chloride is dissolved in water at 40 °C to make a saturated solution. The temperature is raised to 80 °C to dissolve additional copper(II) chloride. At 80 °C the solution is:

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- A. Saturated
- B. Supersaturated

5. When a solution is saturated, which is **not** true?

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- A. The rates at which solute molecules go in and out of solution are equal.
- B. The net rate of dissolution of solute is zero.
- C. The net rate of precipitation of solute is zero.
- D. The solute concentration depends on the amount of precipitated solute present.

6. Can two miscible liquids be combined to form a supersaturated solution?

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- A. Yes
- B. No

7. 5.478 grams of potassium acetate and 2.143 grams of iron(III) hydroxide are added to a beaker containing 100.0 mL of water and stirred vigorously. A solid settles to the bottom of the beaker. If the water is decanted and the solid is dried, what is the maximum mass of solid that should be recovered?

grams

8. Which of the compounds will be most soluble in ethanol ( $\text{CH}_3\text{CH}_2\text{OH}$ )?

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- A. trimethylamine ( $\text{N}(\text{CH}_3)_3$ )
- B. acetone ( $\text{CH}_3\text{COCH}_3$ )
- C. ethylene glycol ( $\text{HOCH}_2\text{CH}_2\text{OH}$ )
- D. hexane ( $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_3$ )
- E. None of these compounds should be soluble in ethanol.

9. Which of these statements is generally TRUE?

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- A. The solubility of a solid is not dependent on either temperature or pressure.
- B. The solubility of a solid is highly dependent on pressure.
- C. The solubility of a solid is highly dependent on both pressure and temperature.
- D. The solubility of a solid is highly dependent on temperature.
- E. None of the above.