

1. Explain what is meant by the expression "like dissolves like".
2. An unknown compound is observed to mix with benzene (a nonpolar solvent) but not with water. Is the unknown compound ionic or covalent?

If the unknown compound is a liquid, will it be able to dissolve table salt? _____ Explain:

3. What are the chemical characteristics of a good dry-cleaning solvent?
4. Explain why you are more likely to overdose on vitamin A than on vitamin C.
5. Some industrial plants use water from nearby rivers and streams as a coolant. When the water is returned to the river or stream, the water is warmer than it was originally. This is referred to as "thermal pollution". Using your knowledge of solubility, why might this thermal pollution be harmful to fish?

6. After a bottle of carbonated drink has been open for a while, it tastes "flat". Explain why.
7. For most solid solutes, the degree of solubility in a liquid solvent (increases, decreases) with an increase in the temperature of the solvent.
8. Describe what happens to the degree of solubility of a gaseous solute in a liquid:
- a) with a decrease in the temperature of the solvent.

 - b) with an increase in pressure (_____ Law).
9. The following statement is false: It is not possible to make a saturated solution from a substance that is described as only slightly soluble. Explain why this statement is false.