Name: key

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Chemistry 11

Polarity and Solutions

Read pages 199-207 in Hebden, then watch the Crash Course Chemistry video on Polar and Non-Polar Molecules #23 (link for this video is provided) before answering the following questions:

1. How do you identify a polar molecule?
   - is asymmetric (lacks symmetry)
   - has a permanent dipole (separation of charge)

2. Describe geometric symmetry in terms of molecules:
   is symmetrical → non-polar
   lacks symmetry → polar

3. Explain how you would draw a dipole?
   $\delta^+ \longrightarrow \delta^-$ "dipole" ie: δ^+ Na–Cl δ^-

4. ~~What does "like~~ dissolves like" mean?
   Similar solvents will dissolve similar solutes
   polar " " " polar "
   non-polar " " " non-polar "

5. What happens when you combine water and alcohol?
   "like dissolves like" → both polar
   50 mL water + 50 mL alcohol ⇒ 98 mL mixed

6. Why is water so truly amazing?
   - polar, H-bond, universal solvent

7. What is a hybrid molecule? What is an example of one?
   a molecule that has both a "polar" and a "non-polar" region. "Soap" is an example.

Now do examples 9,10,14-17, 18-22 over pages 201-207