To make solution

- Like dissolve likes
  - polar solvent → polar solute
  - polar solvent → ionic solute
  - nonpolar solvent → non-polar solute.

I think of little magnets → polar & ionic and jelly beans → nonpolar

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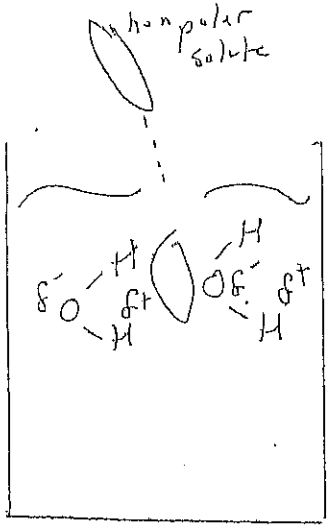
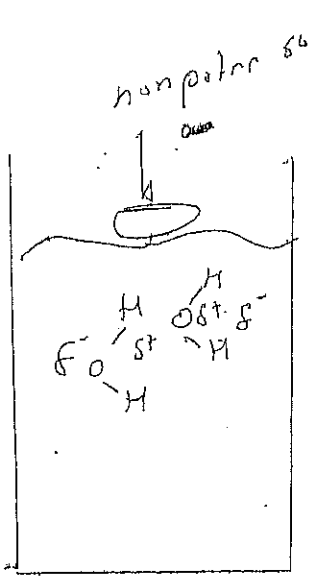
Not dissolving to make solution, so create 2 separate phases.

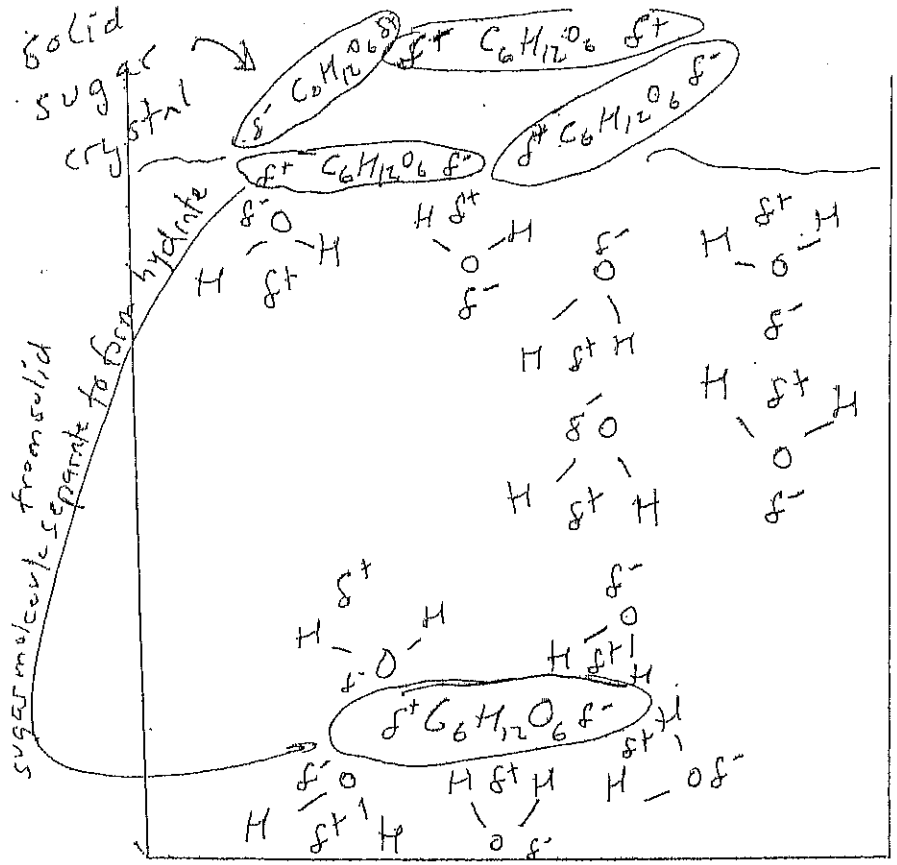


- To put nonpolar between polar solvent, you have to overcome CF, so polar solvent will stick to each



- Since nonpolar solute has no CF, it can't overcome CF of polar solvent so it is pushed

Notes



Polar solute dissolve in polar solvent (H_2O).
(~~salt~~) sugar

- Partially charge end of water molecule that creates CF (columbic force) to separate molecule from other molecules in solute is determined by which partially charged end of solute molecule. ($\delta^+ \Rightarrow \delta^-$) ($\delta^- \Rightarrow \delta^+$)

- Solute molecule & water create their own entity.

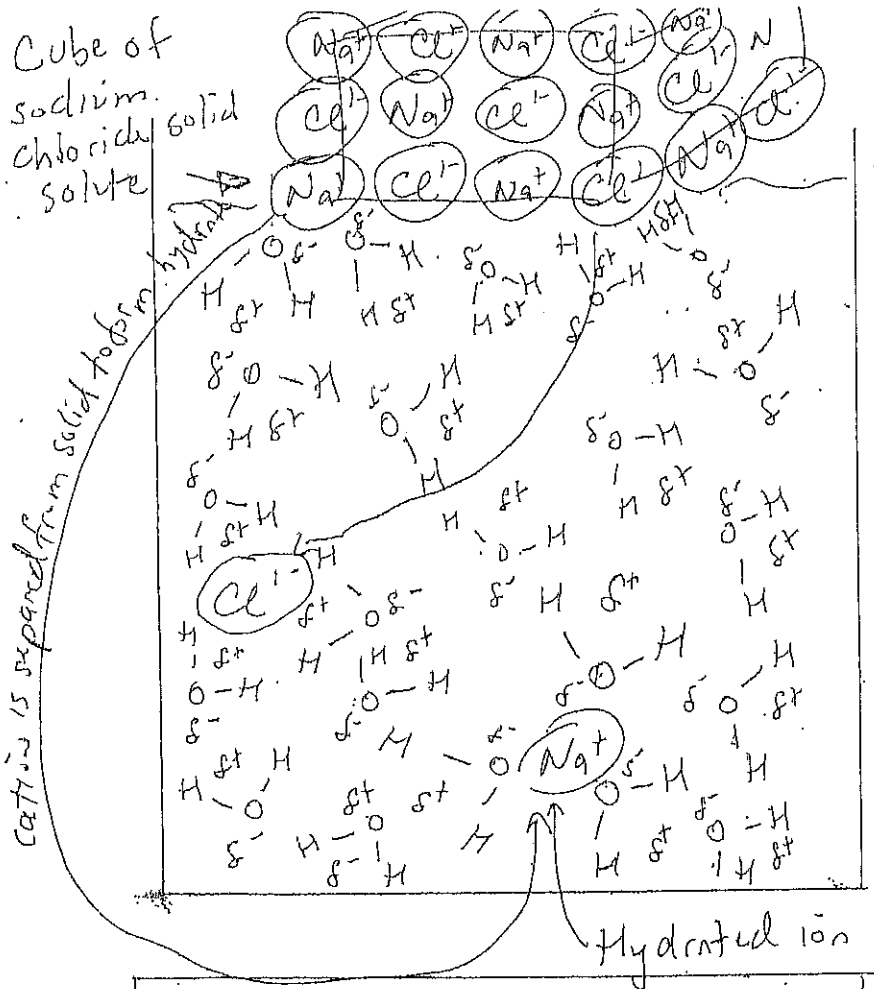
- 2 important issue w/ polar solutes dissolved by polar solvent.

a. Basic unit of a compound is the molecule. When dissolve, it stays intake and just separates from other molecules in polar solutes.

b. Hydrated molecule has water molecules with δ^- side near it on partially positive end of molecule (δ^+) and visa versa for other end.

- So you don't lose physical property of solute when it dissolves!!

Remember; physical process; no identity change.



Ionic solute dissolve in polar solvent
(salt) (H_2O)

- Partially positive (δ^+) end of water orient next to the cation (Na^+) and create a greater coloumbic force than the coloumbic force holding cation in solid. so cation is separated from solid.
- Cation and water create their own entity, hydrated ion; ion surrounded by water

- Empty space between solvent particles.
- Solute fills empty space
(Solvent particle separate solute into its basic unit; ionic cpd → ions molecule cpd → molecules called hydrated
- So, only can put so much solute into given solvent Amt.
- Periodically, hydrated ion or molecul bump into each other to create solute Again (called crystallization for solid solu

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3 types of Solution

- Unsaturated - empty space left not put all solute possible in
Rate of dissolve >> rate of crystallizat
- Saturated - all empty space filled; maximu solute ada
Rate of dissolve = rate of crystallizatio
Equilibrium
- Saturated solution with undissolved solute on bo