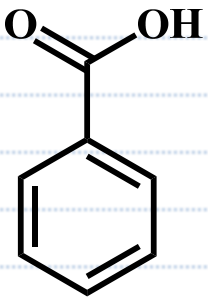
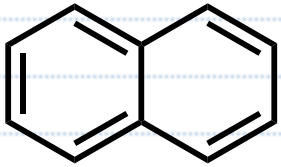
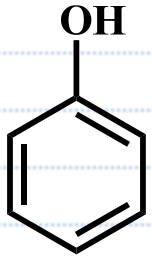
Extraction – Isolation of Three Organic compounds



An Organic Acid



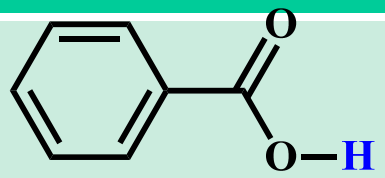
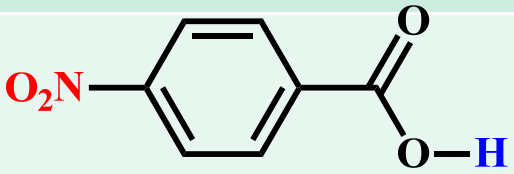
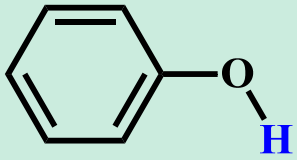
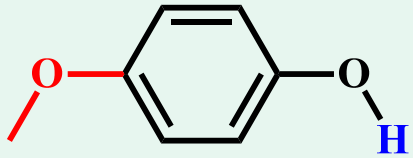
A Neutral Compound



A Phenol - but still an acid

Extraction – A Crash Course Review on Acid/Base

The lower the pKa of a particular proton, the more acidic

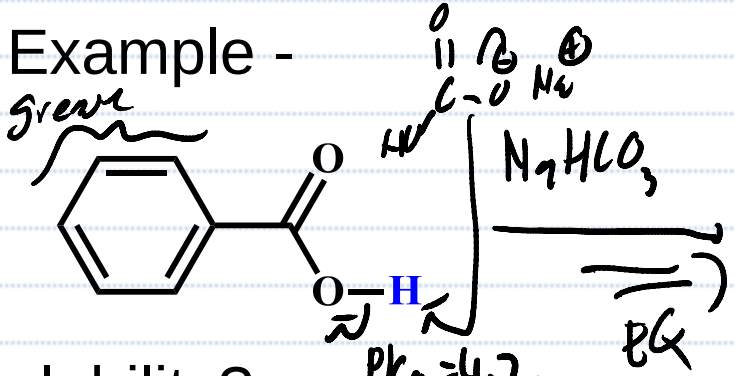
Molecule	pKa of Blue Proton
	4.2
	3.41
	9.9
	16.2

Note – the pKa's are affected by the groups red for reasons you will get to in 262.

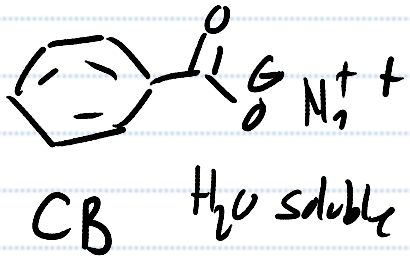
Extraction – A Crash Course Review on Acid/Base

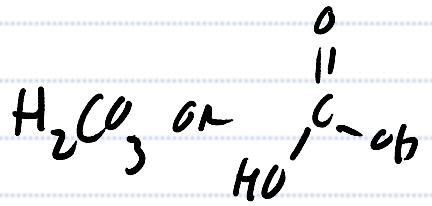
Recall – acid/base equilibria will always favor the side with the ACID or CONJUGATE ACID that has the HIGHER pKa!

Example -



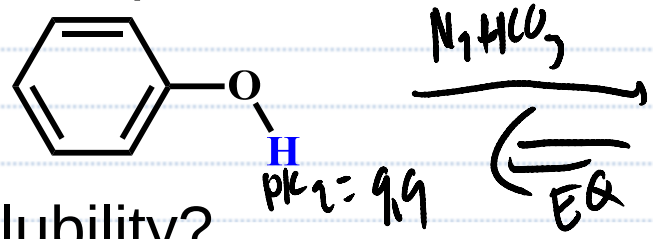
solubility? organic solvent



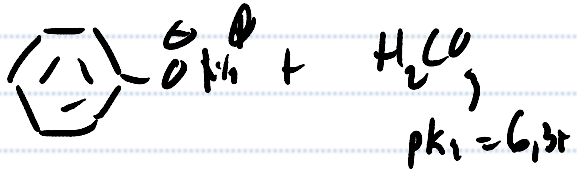


solubility?

Example -



solubility? organic soluble



solubility? H_2O soluble

Most of our compounds have both polar and non-polar character.

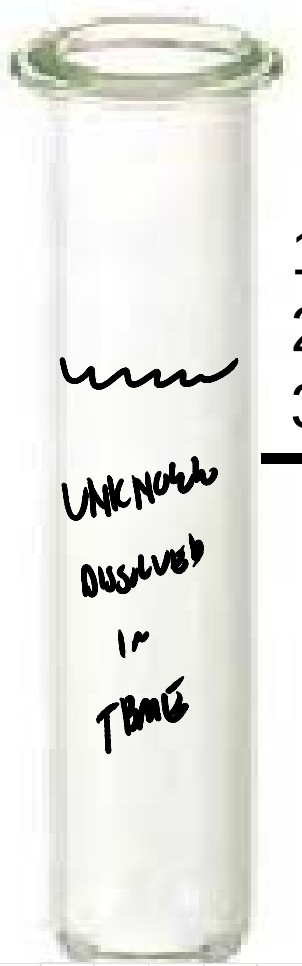
However, the greasy (NON-POLAR) outweighs polar.

Extraction – The Technique(s)

Our organic solvent: 

Fairly immiscible (insoluble) with water, actually, it is 3.5% (by volume) miscibility with water. Drying agent anybody?

Dissolve unknown in TBME

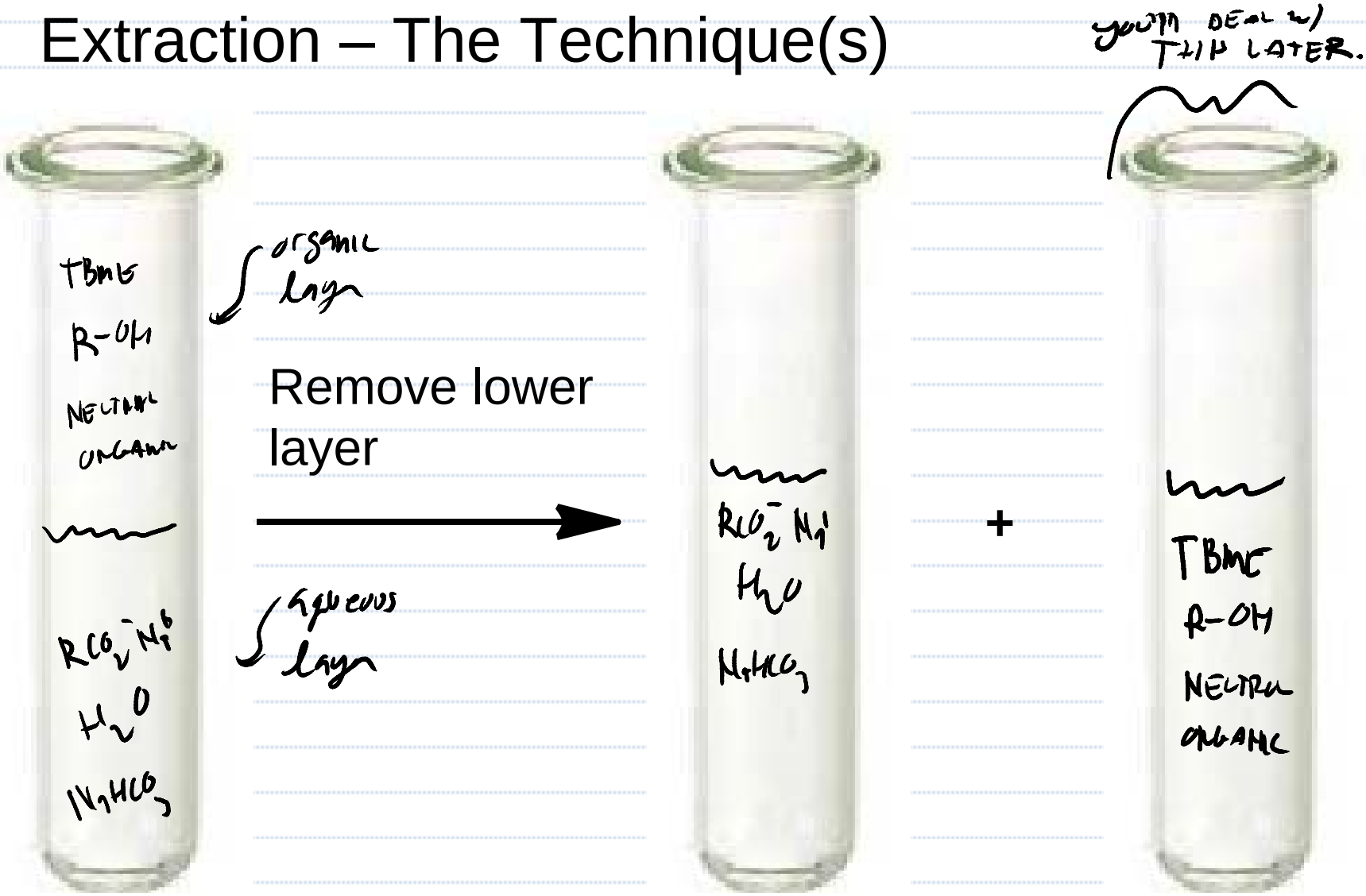


1. Add sat'd, aq $NaHCO_3$
2. Agitate
3. Let layers separate

What happens?

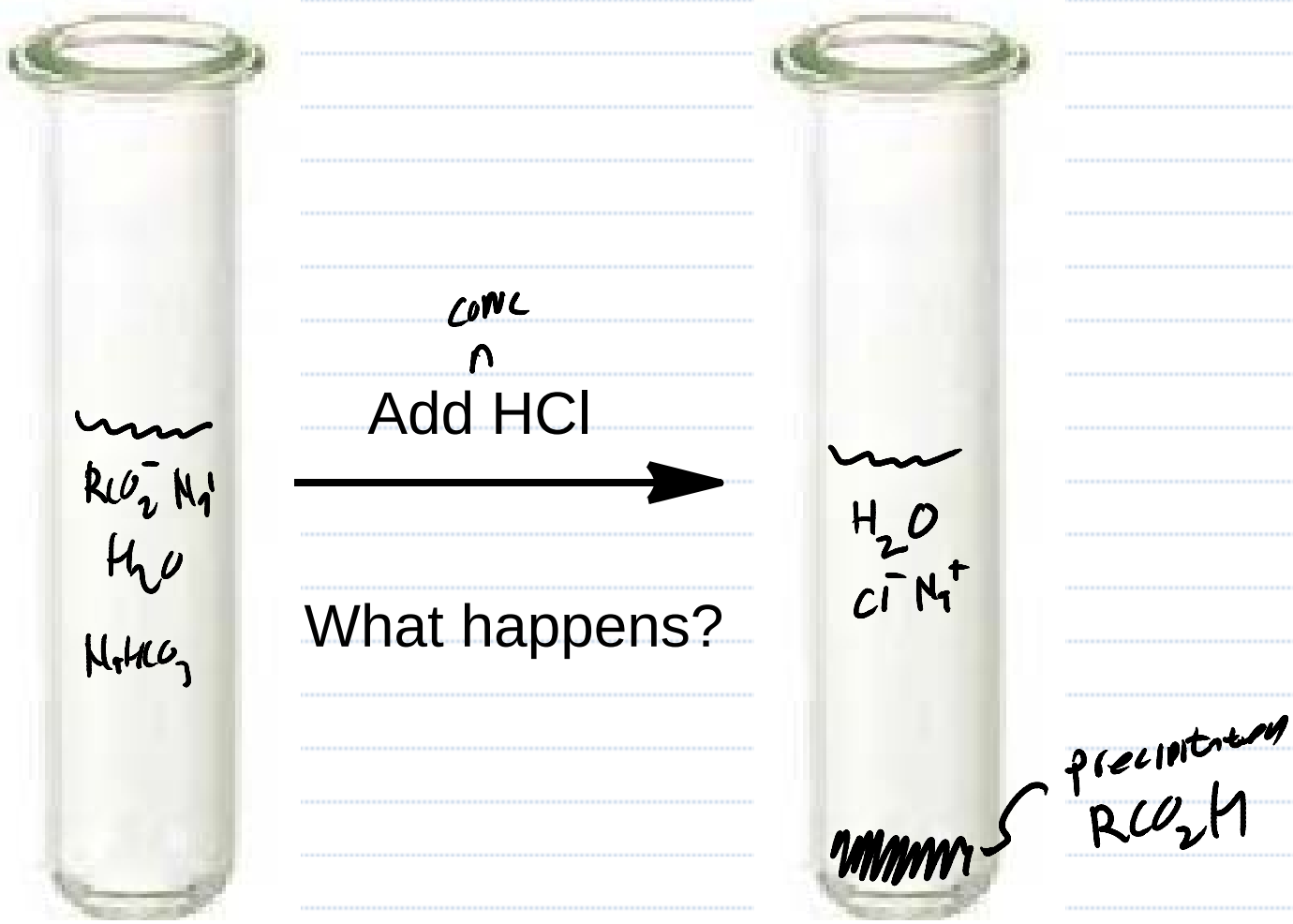
Which layer is which?

Extraction – The Technique(s)



Lower layer is more easily removed via Pasteur pipet.

Extraction – The Technique(s)



Extraction – The Technique(s)

Things to Watch out for and note:

- Confusion! Label tubes!
- Know your layers
- Effective time management
- Quantitative transfer