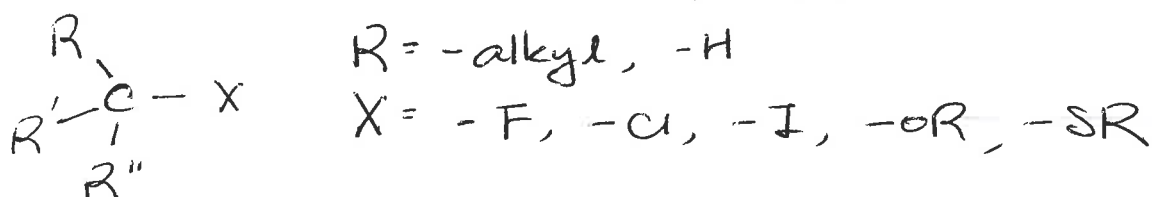


Submit a *Single-sided Copy* to the Undergraduate Office
NO NOT STAPLE - ONLY WRITE NOTES INSIDE THE SQUARE BELOW

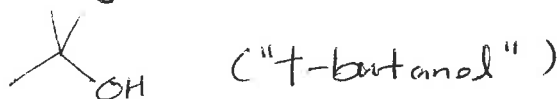
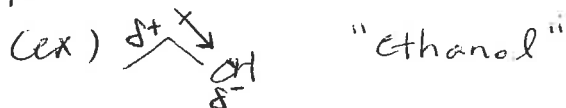
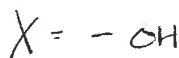
Ch. 8 Non-covalent Interactions and Solvation
 (Problems 2, 4, 6, 13a, 15, 20-22, 24, 25, 27, 28-29 (not c), 30, 38, 41, 44, 45, 50, 57)



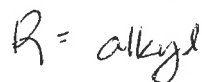
1) Alkyl Halides



2) Alcohols



3) Ethers



one word,
 also a
 common
 solvent



THF
 tetrahydro-
 furan

Course _____ Lecturer _____

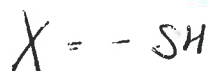
Day _____ Date _____

Notes Taken By _____ Total # of Pages _____

Submit a *Single-sided Copy* to the Undergraduate Office
NO NOT STAPLE - ONLY WRITE NOTES INSIDE THE SQUARE BELOW

4) Thiols =

"S" alcohols



3-methyl-1-butane-1-thiol
(skunk)



grapefruit smell

5) Thioether = sulfide



Alcohols, ethers, alkyl halides

- Common solvents
- Relationship between solvent properties + molecular structure

"Like dissolves like"

salad dressing:
olive oil (alkanes)
H₂O (vinegar, AcOH)

Parameters

1) Dipole moment (μ)
- in Debyes

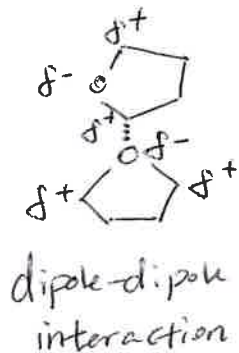
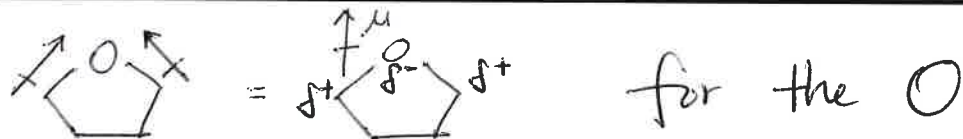
2) Dielectric constant (ϵ)
- unitless

Course _____ Lecturer _____

Day _____ Date _____

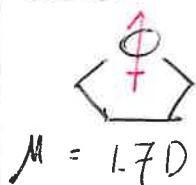
Notes Taken By _____ Total # of Pages _____

Submit a *Single-sided Copy* to the Undergraduate Office
NO NOT STAPLE - ONLY WRITE NOTES INSIDE THE SQUARE BELOW

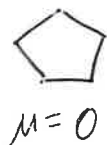


Take all these interactions (non-covalent) into account, you get ϵ

In general, $\epsilon > \mu$ equals "more polar" and usually correlates with μ



vs



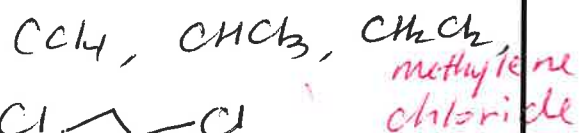
$\epsilon = 7.6$

$\epsilon = 2$

Miscible w/ H_2O

immiscible w/ H_2O

Note: Chlorocarbons
- Have dipole moment
- Most are nonpolar (immiscible)



Course _____ Lecturer _____

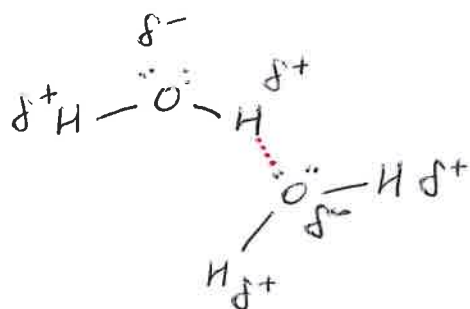
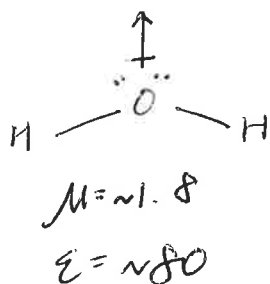
Day _____ Date _____

Notes Taken By _____ Total # of Pages _____

Submit a *Single-sided Copy* to the Undergraduate Office

NO NOT STAPLE - ONLY WRITE NOTES INSIDE THE SQUARE BELOW

H₂O



Hydrogen bonding

- NCI that is attraction of H bonded to electronegative atom (-O-H, -N-H) and an electron-rich atom (- \ddot{O} R, - \ddot{N} R₂ or anion)

H-bond donors are Brønsted acids
Typically, $pK_a \leq 20$