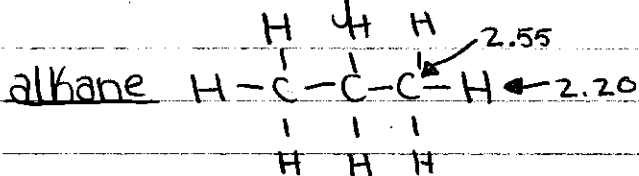


Polarity of Organic Compounds

Jan. 13/14

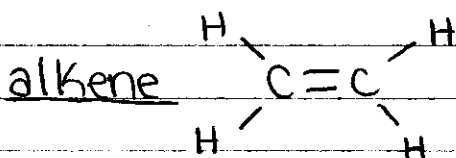
- based on difference in electronegativity
- also based on shape
- it determines some physical properties
 - melting point and boiling point
 - solubility



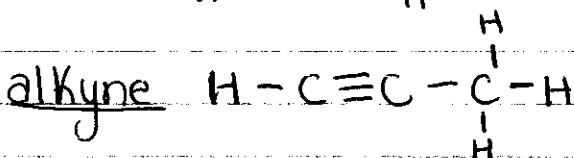
∴ non-polar and insoluble in water

$$\Delta EN = 2.55 - 2.20$$

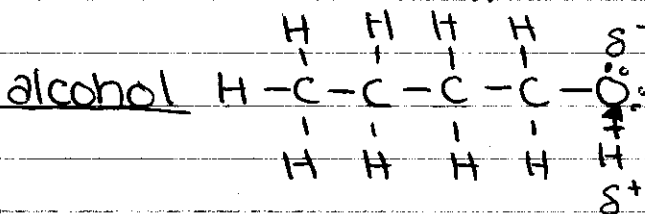
$$= 0.35 \therefore \text{non-polar}$$



∴ also non-polar and insoluble in water



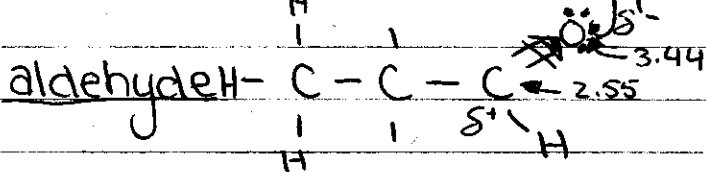
∴ also non-polar and insoluble in water



∴ Very polar and soluble in water

$$\Delta EN = 3.44 - 2.20$$

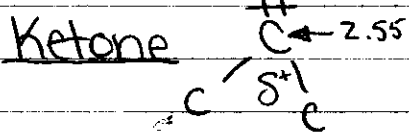
$$= 1.24 \therefore \text{very polar}$$



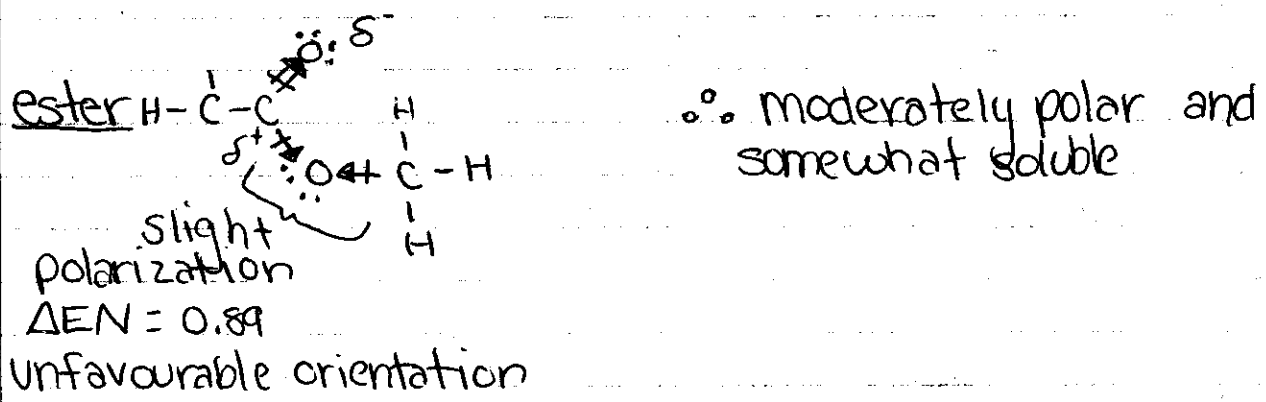
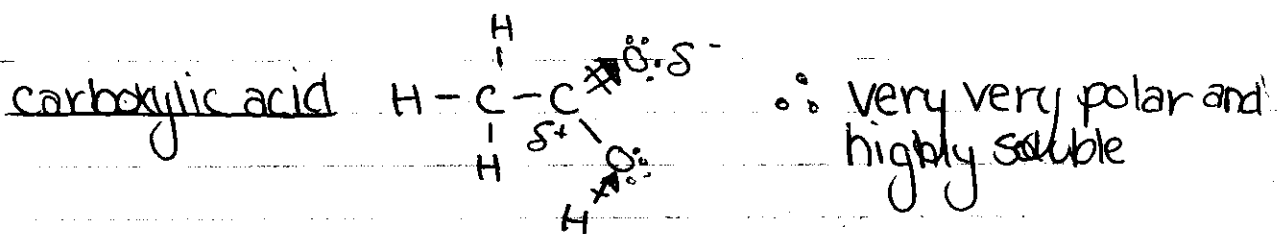
∴ Moderately polar and somewhat soluble in water

$$\Delta EN = 3.44 - 2.55$$

$$= 0.89 \therefore \text{moderately polar}$$

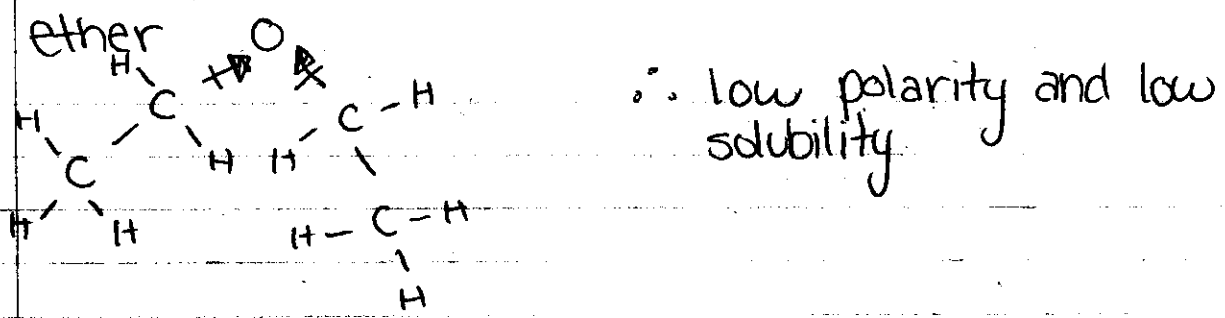
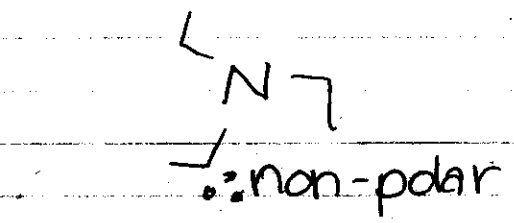
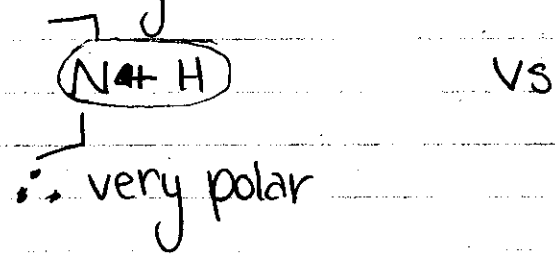
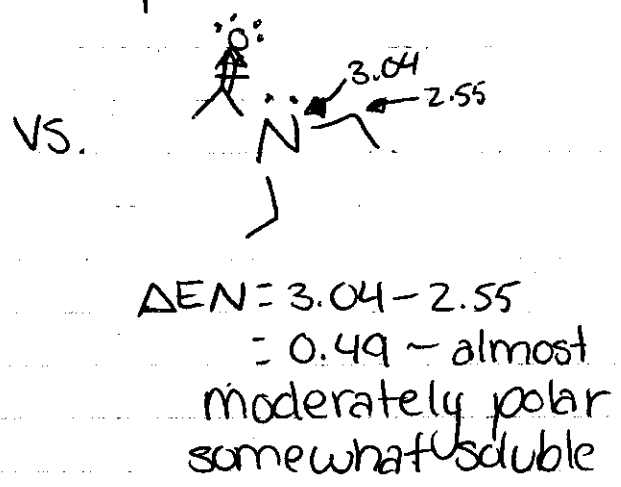
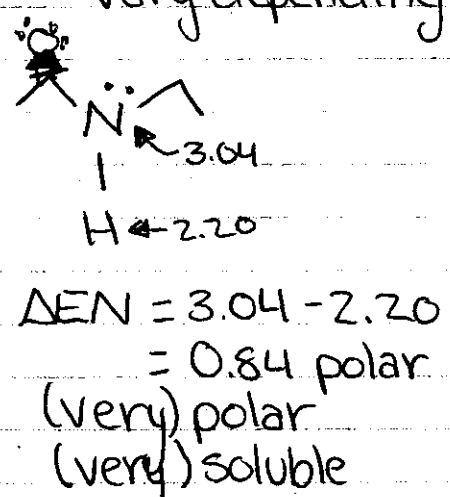


∴ moderately polar and somewhat soluble in water



amide and amine

- vary depending on the presence of H on the N



alkane - non-polar

alkene - non-polar

alkyne - non-polar

alcohol - very polar

aldehyde - moderately polar

ketone - moderately polar

Carboxylic acid - very very polar

ester - moderately polar

amide - varies

ether - low polarity

amine - varies