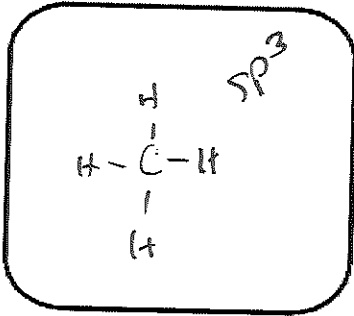


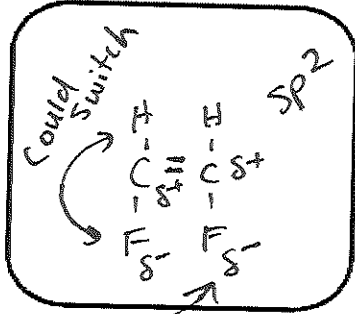
Preliminary Quiz 2
Inter and intramolecular bonding

Objectives: Intra and inter molecular bonding #3

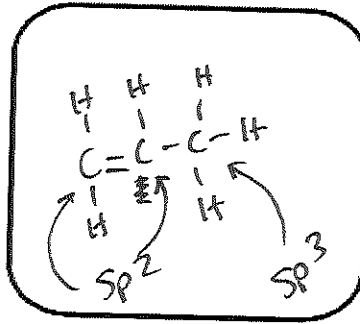
CH₄



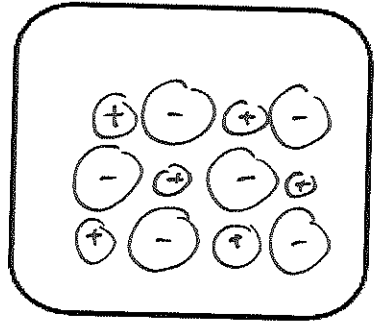
C₂H₂F₂



C₃H₆



NaBr



1. In the box provided, draw an appropriate model of each substance.

2. If the molecule has a permanent dipole label them.

3. For each carbon differentiate the shape and hybridization for each Carbon atom on the chain.

4. Properties of substances

a. C₂H₂F₂, is a liquid used in dry cleaning clothes. Relative to atomic bonding theories, why is this substance a liquid?

↑ IMF due to dipole-dipole attractions

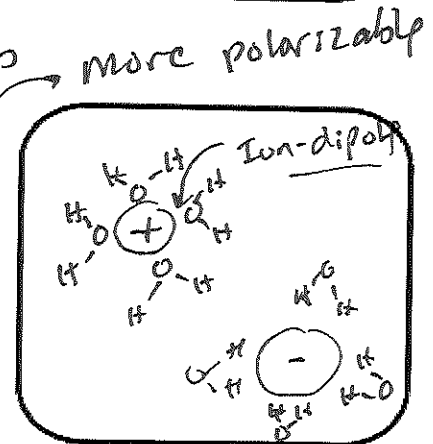
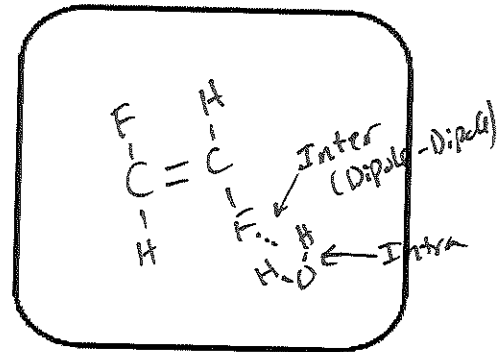
b. C₃H₆ and CH₄ are gases, if pressure is applied to each of these gases, which would liquefy first? Justify?

C₃H₆ ↑ LDF due to more long-chained

c. This substance has the highest melting point. Justify.

NaBr, Melting Breaks an Ionic Bond

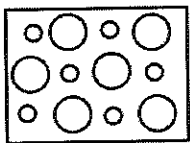
5. Two of the substances dissolve in water. In the boxes to the right show the dissolution process. Label forces (inter and intra)



Multiple Choice

Identify the choice that best completes the statement or answers the question.

1.



(#3-1 / #2-3)

The substance above is likely (ionic/molecular/network covalent) of the identity _____?

- a. ionic, KCl
 b. network covalent, C
 c. ionic, NaCl
 d. molecular, He

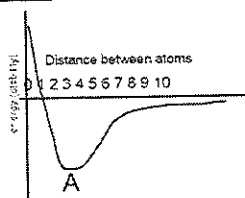
check the sizes

2. Which of the following 1M solutions of each would have the highest conductor of electricity? (#3-2)

- a. NaCl
 b. MgCl₂
 c. AlCl₃
 d. NaNO₃

more ions
 AlCl₃ → Al³⁺ + 3Cl⁻

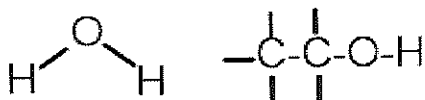
3. (#3-3)



If the substance examined here is H₂ having an inter-nuclear distance of 3, what would you expect for the inter-nuclear distance of I₂

- a. Greater, 3-5
 b. less, 1-3
 c. fairly similar 3
 d. not determinable from this model

large internuclear distance.



4.

(#3-4) A chemical's ability to enter the brain is determined by the chemical's polarity. Which of the following is true

- I. Both are considered polar. *yes*
 II. The chemical to the right is non-polar due to being linear. *no*
 III. Both are considered non-polar due to London dispersion forces. *no*
 a. I only
 b. I and II only
 c. II only
 d. I, II, and III only

(#3-4) Relative to the two substances above, which of the following is true?

- I. When melted Hydrogen bonds are disrupted. *yes*
 II. When melted London dispersion forces are disrupted. *yes* → everything LDF
 a. I only
 b. Neither I or II
 c. II only
 d. Both I and II