**Homework #3: Chemistry 1013 Spring 2014**

**ANSWERS Due Wednesday 12 February in class 17 pts**

1. Problem 4, page 119 of text *1 pt*

Weakest bond is C-C; strongest is C≡C

1. Problem 14 (both molecules), page 120 of text *2 pts*

Methyl iodide has 14 valence e-

Ethyl methyl ketone has 30 valence e-

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1. Draw the electron dot structure for: (see pp 100-106) *2 pts each*

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1. CHF2Cl b) ethanol c) acetic anhydride

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 : F:

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:F-C-H

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 :Cl:

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1. Draw the electron dot structure for : (2 pts each)
2. Cl2 b) O2 c) N2

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:Cl-Cl: :O=O: :N≡N:

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1. What are two physical properties that differ sharply between salt/mineral compounds and organic compounds and why are they so different between these material classes ?

(2 pts)

Melting point range (high for salts low for organics)

Solubility in water (often high for salts, low for organics)

Conductivity in melt(high in salts; low for organics)

Brittleness (high in salt; low for organics, which are flexible)

All these contrasts reflect the ionic bonding character of salts/minerals and the covalent (shared) electron bonding in organics

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