

Name: _____
Chemistry 112
Final Exam

Section I . New Material Each questions worth 20 points- You may NOT skip any questions from this section.

- 1 Give the chemical equations that define the following reactions:
Lattice Energy (For NaCl)

First Ionization Energy (Of Mg)

Electron Affinity (of F)

Bond Energy (of H₂)

Heat of formation (for NaCl)

2. Give the electron configuration for the following atoms or ions:

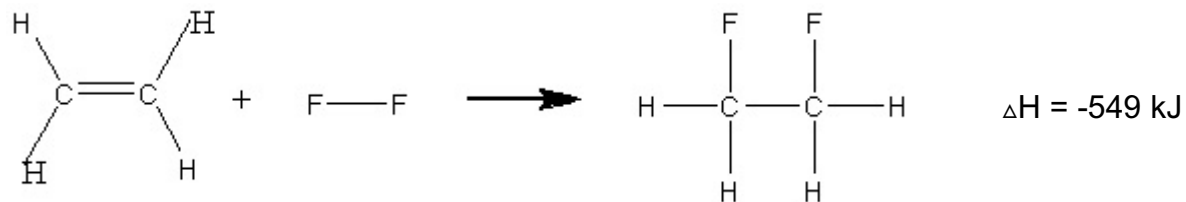
O

Se

Ca²⁺

Sn²⁺

3 Consider the following reaction:



Given that the C-C bond energy is 347 kJ/mol, the C=C bond energy is 614 kJ/mole, the C-H bond is 413 kJ/mol and the F-F bond energy is 154 kJ/mol. Estimate the bond energy of the C-F bond.

4. Given the following energies, calculate the lattice energy of LiF.

Rxn	E(kJ)
$\text{Li(s)} + \frac{1}{2} \text{F}_2(\text{g}) \rightarrow \text{LiF(s)}$	-617
$\text{Li(s)} \rightarrow \text{Li(g)}$	161
$\text{Li(g)} \rightarrow \text{Li}^+(\text{g}) + \text{e}^-$	520
$\text{F}_2(\text{g}) \rightarrow 2\text{F(g)}$	154
$\text{F(g)} + \text{e}^- \rightarrow \text{F}^-(\text{g})$	-328

5 For each compound below give the Lewis Structure, Electron Configuration, Molecular Configuration and tell if it has polar bonds and is a polar molecule.

Lewis Structure	e ⁻ Config	Molecular Config	Bonds	Polar Molecule
SCl ₂				
ICl ₃				
TeF ₄				
PCl ₅				