Name: _____

Date: _

[3 pt] 1. What is the difference between Ionic and Molecular compounds with respect to their electrons?

[3 pt] 2. Explain why F_2 is a molecular compound and not an ionic compound.

[4 pt] 3. Define the following terms (1) Lone pair of electrons, (2) Bonding pair of electrons. Draw a Lewis structure illustrating these terms and identify them appropriately.

[6 pt] 4. Draw the Lewis Structure of the following Covalent compounds, and identify the bond type formed.: (a) I₂ (b) S₂ (c) P₂

[3 pt] 5. What is a Non-polar Covalent bond? Draw and label an example of a molecule that is Non-polar Covalent.

[3 pt] 6. Define the term 'Polar Covalent' bond. Draw an example of a molecule (not given in lecture!) illustrating a Polar Covalent bond. Properly label one atom δ - and one atom δ +.

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[4 pt] 7. Define the term 'Electronegativity' and complete the following table.

Type of Bond	$\Delta \mathbf{EN}$	Example
Ionic		
Polar Covalent		
Covalent		

[4 pt] 8. Explain the following two trends in Electronegativity.

- (a) Electronegativity (Increases, Decreases or Same) across a row (Li vs F)? Explain.
- (b) Electronegativity (Increases, Decreases or Same) down a column (Li vs Cs)? Explain.
- [5 pt] 9. Classify the bond between the following pairs of elements as primarily (I)onic, (P)olar covalent, or (N)onpolar covalent in nature. Show work to support your answers.

(a) NaCl	9(a)
(b) CH_4	9(b)
(c) CCl_4	9(c)
(d) CaO	9(d)
(e) N_2	9(e)