

Name: _____

Date: _____

[2 pt] 1. What is the primary reason ionic chemical bonds form?

[8 pt] 2. Complete the following statements

- (a) Ionic bonds form between _____ and _____
- (b) Ionic compounds tend to arrange themselves into a tightly bound _____ structure.
- (c) Cations are formed by _____ electrons while anions are formed by _____ electrons.
- (d) The electrostatic attraction that holds ions together is directly proportional to the _____ and inversely proportional to the _____
- (e) Ionic bonds are _____ and tend to result in molecules with _____ boiling and melting points and will _____ electricity when dissolved in water.

[3 pt] 3. What do each of the following represent in Lewis Structure Terminology:

- (a) :
- (b) ·
- (c) []
- (d) -

[4 pt] 4. Complete the Lewis Structures for the second row of the periodic table below.

Li Be B C N O F Ne

[3 pt] 5. Define the term 'Octet Rule'. Which two atoms are exceptions to the rule (and why)?

[4 pt] 6. Show how a potassium cation is formed from a neutral potassium atom using:

(a) Picture

(b) Chemical Reaction

(c) Electron shell configurations

(d) Lewis Structures

[4 pt] 7. Show how a nitrogen anion is formed from a neutral nitrogen atom using:

(a) Picture

(b) Chemical Reaction

(c) Electron shell configurations

(d) Lewis Structures

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[6 pt] 8. Explain in terms of (1) Electron Configurations, (2) Lewis Structures and (3) Words, how the ionic bond is formed in the following reaction: $\text{Mg(s)} + \text{Cl}_2(\text{g}) \longrightarrow \text{MgCl}_2(\text{s})$.

[6 pt] 9. Explain in terms of (1) Electron Configurations, (2) Lewis Structures and (3) Words, how the ionic bond is formed in the following reaction: $2\text{Na(s)} + \text{O}(\text{g}) \longrightarrow \text{Na}_2\text{O(s)}$.