Chem 117 Jasperse Quiz 3 Chapter 3 Name:
Due: Friday, October 22

1. Draw the Lewis structure for a neutral oxygen atom

2. Draw the Lewis structure for a fluoride F^- anion

3. Draw the Lewis structure for NH_3.

4. Draw the Lewis structure for CH_2S.

5. Draw the Lewis structure for CHN.

6. Which of the following statements would be false when magnesium reacts with Cl_2?
    a. The product would have ionic bonding
    b. Each magnesium would give up two electrons
    c. Each chlorine atom would accept one electron
    d. In the product, the magnesium would be a cation and the chloride would be an anion
    e. The formula for the product would be $MgCl_3$

7. Which of the following statements would be true regarding compounds with the formulas NaBr, C_2H_6O, and NF_3?
    a. NaBr would have a high melting point because it is ionic; C_2H_6O and NF_3 would have low melting points (perhaps below room temperature) because they have covalent bonding.
    b. NaBr and NF_3 would have high melting points because they are ionic; C_2H_6O would have a low melting point (perhaps below room temperature) because it has covalent bonding.
    c. NaBr would have a low melting point because it is ionic; C_2H_6O and NF_3 would have high melting points because they have covalent bonding.

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8. Draw at least one good Lewis structure for NO_2^- anion?

9. For the NO_2^- anion in problem 8, which of the following statements is <u>false</u>?
    a. The real thing would be a <u>hybrid</u>, because two equally good Lewis structures could be drawn
    b. In the real anion, one N-O bond would be like an N-O single bond, the other like an N=O double bond
    c. In the real anion, the lengths of the two N-O bonds are equal
    d. In the real anion, the lengths of an N-O bond would be shorter than for an N-O single bond and longer than for an N=O double bond

10. For the elements C, O, Al, and Si, rank them in order of <u>increasing electronegativity</u>, for least electronegative to most electronegative/
    a. C < O < Al < Si
    b. Al < Si < C < O
    c. O< C < Si < Al
    d. Al < C < Si < O

11. Which of the following statements is <u>true</u> for Br_2, $CaCl_2$, and NF_3?
    a. Br_2 is nonpolar covalent, $CaCl_2$ is ionic, and NF_3 is polar covalent
    b. $CaCl_2$ is nonpolar covalent, Br_2 is ionic, and NF_3 is polar covalent
    c. NF_3 is nonpolar covalent, $CaCl_2$ is ionic, and Br_2 is polar covalent

12. What would be an appropriate name for SO_3?
    a. Sulfur oxide.
    b. Sulfate.
    c. Sulfur trioxide.
    d. Sulfur (VI) oxide

13. Write the formula for aluminum sulfide

14. Which of the following would be the correct name for $Fe_2(SO_4)_3$? (You may need to look up the charge for the sulfate antion)
    a. Iron sulfate
    b. Iron (II) sulfate
    c. Iron (III) sulfate

Did you remember to write your name on the front?