

SC111: General Chemistry

NAME \_\_\_\_\_

**Quiz 5**      **Circle your section**

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1. Write the chemical equation for the second ionization energy of Ca. (2 points)

2. Write the electron configuration for the following chemical species. (4 points)

**Na<sup>+</sup>**(you may NOT use noble gas configuration shorthand - no brackets)

**Ni** (you may use noble gas configuration shorthand)

3. Write the electron Lewis structures for the following chemical species.

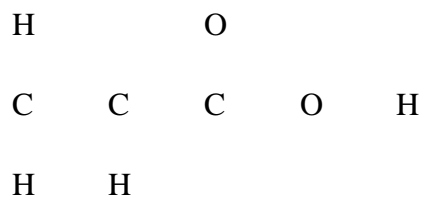
**BF<sub>3</sub>** (2 points)

On this one, show all resonance structures and on one of the structures, the formal charges.(3 points)

**O<sub>3</sub>**

MORE ON BACK!

Fill in the bonds and lone pairs on this skeleton. (3 points)



4. Fill in the blanks with the letter corresponding to the closest description (6 points)

\_\_\_\_\_ electromagnetic radiation

\_\_\_\_\_ ground state

\_\_\_\_\_ valence electrons

\_\_\_\_\_ Pauli Exclusion Principle

\_\_\_\_\_ effective nuclear charge,  $Z_{\text{eff}}$

\_\_\_\_\_ Hund's Rule

**A.** No 2 electrons in an atom can have the same 4 quantum numbers.

**B.** The lowest E configuration has the maximum number of unpaired spins.

**C.** The atomic number of an atom minus the effect of electron repulsions

**D.** A way energy travels through space.

**E.** The electrons in the outermost shell of an atom

**F.** The lowest possible energy state