

This quiz is take-home and open book, and it is intended that all members of the group contribute to completing it. It is a violation of the Academic Honor Code to sign a quiz that you did not work on. **The quiz is due at the end of class on Thursday, October 12.**

List names in alphabetical order, and give social security numbers! Put names on all pages, and staple pages together

Points

(6) 1. For the following molecular compounds, indicate the total number of valence electrons required for a Lewis dot structure, then draw the Lewis dot structure:

(a) NCl_3 (N is central atom)

(b) CS_2 (C is central atom)

(c) HOCl (O is central atom)

(d) Chloroform, CHCl_3 (C is central atom)

(e) Formaldehyde, CH_2O (C is central)

(e) Hydrogen cyanide, HCN (C is central)

List names in alphabetical order. **Be sure to staple pages together!**

- (3) 2. There are three different Lewis Dot Structures that can be drawn for laughing gas (NNO, connected in that order). Structures that have the same structural connection between atoms, but different ways to distribute the electrons, are called **resonance structures**. Indicate the number of valence electrons involved, and draw the three resonance structures for NNO that obey the octet rule.

- (3) 3. Following are sets of three atoms. In each set, **circle** the atom that is the **most electronegative**.

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|-----|----|----|----|-----|----|----|----|
| (a) | C | N | O | (b) | C | Si | Ge |
| (c) | Ca | Mg | Ba | (d) | I | Cl | Br |
| (e) | O | S | Se | (f) | Ca | As | Se |

- (3) 4. Predict whether each of the following compounds would be **ionic** or **covalent**:

- | | |
|-------------------|------------------|
| BaBr ₂ | NO ₂ |
| RbCl | NaI |
| SCl ₂ | NCl ₃ |