For each of the following questions, circle the correct answer.

1. What type of bond is the N-N bond in the \( \text{H-} \overset{\text{N}}{\text{N}} \text{H} \) molecule?
   A) Ionic  
   B) Polar covalent  
   C) Nonpolar covalent  
   D) Metallic

2. Choose the correct Lewis structure for HONO.
   A) \( \text{H-} \overset{\text{O}}{\text{N}} \overset{\text{O}}{\text{H}} \)  
   B) \( \text{H-} \overset{\text{O}}{\text{N}} = \overset{\text{O}}{\text{H}} \)  
   C) \( \text{H-} \overset{\text{O}}{\text{N}} = \overset{\text{O}}{\text{H}} \)  
   D) \( \text{H-} \overset{\text{O}}{\text{N}} = \overset{\text{O}}{\text{H}} \)

3. What is the molecular geometry of \( \text{NH}_2\text{Cl} \) where N is the central atom?
   A) Trigonal pyramidal  
   B) Trigonal planar  
   C) Tetrahedral  
   D) Bent

4. Which one of the following derivatives of ethane has the highest boiling point?
   A) \( \text{C}_2\text{Br}_6 \)  
   B) \( \text{C}_2\text{F}_6 \)  
   C) \( \text{C}_2\text{I}_6 \)  
   D) \( \text{C}_2\text{Cl}_6 \)
CHEM 110 – Quiz 4 – Wednesday, 20 April 2011

For each of the following questions, circle the correct answer.

1. Arrange the following elements in order of increasing electronegativity.
   \[ \text{Al} \quad \text{N} \quad \text{Ca} \]
   
   A) Al < N < Ca       B) N < Ca < Al
   C) Ca < Al < N       D) Ca < N < Al

2. Choose the correct Lewis structure for H₂NOH.

   A)  
   \[
   \begin{array}{c}
   \text{H} \\
   \text{N}=\ddots \text{H} \\
   \text{H}
   \end{array}
   \]
   
   B)  
   \[
   \begin{array}{c}
   \text{H} \\
   \text{N}-\ddots \text{H} \\
   \text{H}
   \end{array}
   \]

   C)  
   \[
   \begin{array}{c}
   \text{H} \\
   \text{N}=\ddots \text{H} \\
   \text{H}
   \end{array}
   \]

   D)  
   \[
   \begin{array}{c}
   \text{H} \\
   \text{N}-\ddots \text{H} \\
   \text{H}
   \end{array}
   \]

3. What is the electron-domain geometry of ICl₃?

   A) Trigonal planar       B) Trigonal bipyramidal
   C) T-shaped        C) Bent

4. What intermolecular force occurs between the gaseous molecules in the following compounds?

   \[ \text{CH}_4, \text{SiH}_4, \text{GeH}_4, \text{SnH}_4 \]

   A) hydrogen bonding  B) dipole-dipole interactions
   C) London dispersion forces  D) electrostatic attractions