Free Response Bonding Test A Honors Test_____

1. Explain the difference between ionic, metallic, and covalent bonding.

Ionic = Metal and nonmetal; Conduct electricity Covalent = Nonmetal non metal
metallic = All metal; Conduct electricity Do not conduct elect.

2. Explain how ions are held together in a covalent bond. Give an example of a covalent bond.

Two nonmetals. In this example → :Br–Br: this is London Forces meaning the electrons position themselves on one side of the atom creating a partial (–) and the remaining side has a partial (+).

3. Write four ions that have same stable electron configuration as Ar, Argon.

K^+	Ca^{2+}	**Ar** (18 e⁻)	Cl^-	S^{2-}

this question is answered dependent upon the example you choose

4. Which noble gas does not follow the octet rule? Explain why.

Xe – Such as XeF_4 (example in class shown to violate the octet rule)

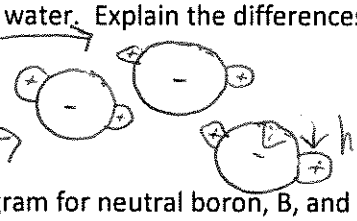
5. Draw a Lewis Dot structure of ammonia, NH_3 and explain if the bond is polar or nonpolar.

Lewis Structure	Polar or Nonpolar and Explain:
H–N–H (with lone pair on N)	Polar; unequal sharing; asymmetrical

Done in class

6. Draw three molecules of water. Explain the differences between intermolecular and intramolecular forces.

the attraction between one molecule to another is inter



hydrogen attracted to oxygen in the same molecule = intra

7. Write the Lewis dot diagram for neutral boron, B, and the ion it forms.

must recognize that Charge is related to Family

3 e in outermost level so it has 3 dots

·B· neutral	·B·

$B = 1s^2 2s^2 2p^1$ (outermost electrons)

$B^{3+} = 1s^2$

Recall Family 1 = +1 Family 2 = +2 Family 3 = +3

8. Write the dot diagram for neutral nitrogen, N, and the ion it forms.

5 e's in outermost level so it has 5 dots

·N·	:N:

$N = 1s^2 2s^2 2p^3$ (outermost electrons)

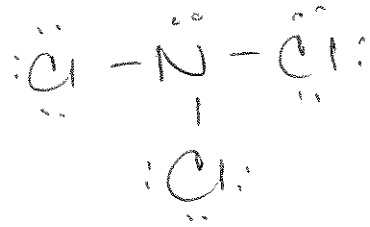
$N^{-3} = 1s^2 2s^2 2p^6$

as an ion it has 8 e's

9. For the molecule, NCl_3, answer the following:

on next page

A. Draw a Lewis Structure
B. Indicate if the bond is polar or nonpolar.
C. Determine the shape of the molecule.



trigonal pyramidal

Complete the following:

Molecule:	AlH_3	SiF_4	NH_3	H_2Te	HCl
Lewis Structure:					
Steric #:	3	4	4	4	0 (no central atom)
Shape:	trigonal planar	tetrahedral	trigonal pyrimidal	Bent	linear
Polar / Nonpolar?:	NP	NP	P	P	P

What type of IMF (intermolecular force) is associated with each of the following **molecules**:

Molecule:	AlH_3	HF	NH_3	H_2S	Ar
	London dispersion Dipole-dipole H-bonding	London dispersion Dipole-dipole H-bonding	London dispersion Dipole-dipole H-bonding	London dispersion Dipole-dipole H-bonding	London dispersion Dipole-dipole H-bonding

Ionic is not a choice and it is NP

Remember steric number was defined in a video we watched. It is defined as

\# of bonded atoms to central atom
\+ \# of lone pr
steric #