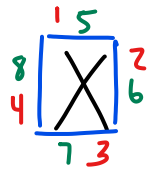


Name All (Review) Period All

College Prep Chemistry

Assignment 3M – Unit 3 Review 30 Points

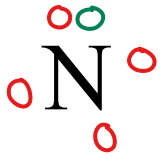
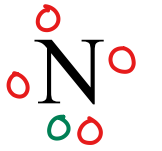
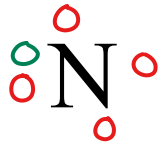
Complete the four forms of the dot structure for the following elements

group gives # val e⁻ (dots)

1A = 1 4A = 4

5A = 5 6A = 6

7A = 7 8A = 8

Element Group				
5A Val e⁻ 5				

Draw the molecular formulas including the lewis dot structures and covalent bonds

— = 2

oo = 2

Element Group	1A	4A	5A	6A	7A	8A
Number Bonds	1	4	3	2	1	0
Number e⁻ Pairs	0	0	1	2	3	4

Steps

1. Bond between atoms (—)
2. e⁻ pairs
3. count e⁻
4. Add extra

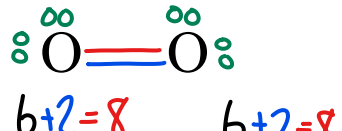
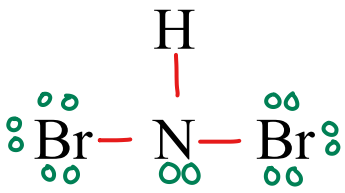
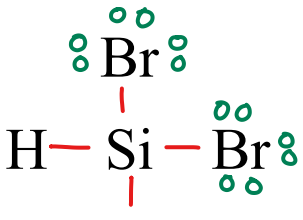
H = 2e⁻

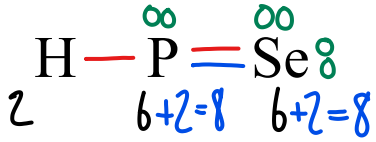
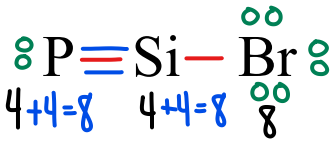
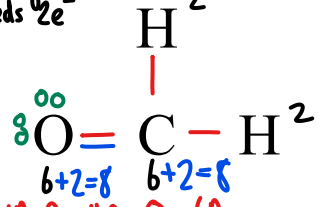
4A-8A = 8e⁻

oo = 2

— = 2

Use chart for # e⁻ pairs

O_2	$HNBr_2$	H_2SiBr_2
6e⁻ : 6e⁻ = double  6+2=8 6+2=8 O : 6A 2 pairs	 H : 1A N : 5A Br : 7A	 H = 1A Si = 4A Br : 7A

HPSe	SiPBr	H_2CO
6e⁻ : 6e⁻ = double  2 6+2=8 6+2=8 H : 1A P : 5A Se : 6A	4e⁻ : 4e⁻ = triple  4+4=8 4+4=8 8 Si : 4A P : 5A Br : 7A	H only needs 2e⁻  6+2=8 6+2=8 H : 1A C = 4A O = 6A

Number	1	2	3	4	5	6	7	8	9	10
Prefix	mono	di	tri	tetra	penta	hexa	hepta	octa	nona	deca

Name or give the formula for the following molecules using the chart of prefixes above

First atom no mono

Formula	Name	Formula	Name
H_3N_1	Trihydrogen Mononitride	C_2Cl_6	Dicarbon Hexachloride

Second atom -ide Use Chart!

Formula	Name	Formula	Name
Si_xO_2	no prefix = 1 Silicon dioxide	C_2F_4	Dicarbon Tetrafluoride

Calculate the Electronegativity for the following molecules, and polarity

Ionic – ED > 1.9	Polar – ED ~~0.5~~ 0.51 – 1.9	Non-Polar – ED < 0.51

Use electro. chart (given)

ED always + If -, make +

large - small ED calc

Metal: Left of zig-zag

Ba - F		H - N		F - Cl	
Elect. Ba	Elect. F	Elect. H	Elect. N	Elect. F	Elect. Cl
0.9	4.0	2.1	3.0	4.0	3.0
Electronegativity Difference		Electronegativity Difference		Electronegativity Difference	
$4.0-0.9=3.1$		$3.0-2.1=0.9$		$4.0-3.0=1.0$	
Bond Type		Bond Type		Bond Type	
Ionic (metal)		Polar Covalent (no metal)		Polar Covalent (no metal)	

Calculate the electronegativity, then use the electronegativity and molecule structure to determine molecule polarity.

Non Polar

Symm.

Polar

Polar Bonds

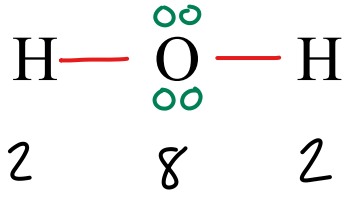
Not symm.

Don't forget — and oo

H_2O	
Elect. H	Elect. O
2.1	3.5
Electronegativity Difference	
$3.5-2.1=1.4$	

Atomic Structure

Symm = Non-Polar



Bond Type	Molecule Type
Polar Covalent (no metal)	Non-Polar