Bond Type Practice

| | increasing electronegativity— group | | | | | | | | - | | | | | | | | | |
|----------|--|-----------|------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------------|-----------|-----------|
| vity | 1 H 2.2 | 2 | | | | | | | | | | | 13 | 14 | 15 | 16 | 17 | 18 He |
| ronegati | Li 1.0 | Be 1.6 | | | | | | | | | | | B 2.0 | 2.6 | N 3.0 | 0 3 <u>.4</u> | F 4.0 | Ne - |
| E | Na 0.9 | Mg 1.3 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | A1 1.6 | Si 1.9 | P 2.2 | S 2.6 | 3.2 | Ar — |
| lecti | 0.8 | 1.0 | Sc 1.4 | Ti 1.5 | 1.6 | 0r 1.7 | Mn 1.6 | Fe 1.8 | Co 1.9 | Ni 1.9 | Cu 1.9 | Zn 1.7 | Ga 1.8 | Ge 2.0 | As 2.2 | Se 2.6 | Br 3.0 | Kr – |
| ng e | Rb 0.8 | Sr 1.0 | γ 1.2 | Zr 1.3 | Nb 1.6 | Mo 2.2 | Tc 2.1 | Ru 2.2 | Rh 2.3 | Pd 2.2 | Ag 1.9 | Cd 1.7 | In 1.8 | Sn 2.0 | Sb 2.1 | Te 2.1 | 1 2.7 | Хе 2.6 |
| creasi | Cs 0.8 | Ba 0.9 | La-Lu 1.1-1.3 | Hf 1.3 | Ta 1.5 | W 1.7 | Re 1.9 | 0s 2.2 | Ir 2.2 | Pt 2.2 | Au 2.4 | Hg 1.9 | T1 1.8 | Pb 1.8 | Bi 1.9 | Po 2.0 | At 2.2 | Rn - |
| decr | Fr 0.7 | | Ac-Ln 1.1-1.7 | 104 - | 105 - | 106 - | 107 - | 108 - | 109 - | 110 - | 111 | 112 - | | | | | | |

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Directions: Determine the type of bond that will form between each pair of atoms in the table below. Use the Electronegativity Chart above. Then provide the name of the compound or molecule.

Electronegativity **Bond Type Difference** (Nonpolar Covalent Chemical Compound Atom 2 Atom 1 (NPC), Polar Covalent formula Name (PC), or lonic (I)) (show work!) 1. $CuBr_2$ Copper **Bromine** 2. Sel_2 Selenium lodine 3. Silicon SiF₂ Fluorine 4. K_3N **Potassium** Nitrogen 5. Lithium Li₂O Oxygen 6. H_2O Hydrogen Oxygen

Sulfur

Bromine

Oxygen

Calcium

Nitrogen

Carbon

CaS

 NBr_3

 CO_2

8.

9.

| 10. | PF ₃ | Phospho | orus Fluorine | |
|-----|--------------------------------|---------|---------------|--|
| 11. | NaCl | Sodiu | m Chloride | |
| 12. | Mg ₃ N ₂ | Magnes | ium Nitrogen | |
| 13. | Al ₂ S ₃ | Alumino | um Sulfur | |

14. For each of the following molecules:

- a. Draw the Lewis dot structure
- b. Predict the VSEPR shape
- c. Build the molecule to confirm the shape.

| A. NCI ₃ | E. CH ₃ CI |
|---------------------|-----------------------|
| | |
| | |
| Shape: | Shape: |
| B. SCI ₂ | F. HCI |
| Shape: | Shape: |
| C. CH₄ | G. CO ₂ |
| Shape: | Shape: |
| D. H₂O | H. CH ₂ O |
| Shape: | Shape: |