**EZPZ Unit 5: Bonding Review**

**Part 1: Name the following compounds.**

|  |  |  |
| --- | --- | --- |
| Formula | Type of bond (ionic/covalent) | Name |
| Fe2S3 |  |  |
| AlPO4 · 7H2O |  |  |
| Si2Br6 |  |  |
| NaBr |  |  |
| C3H8 |  |  |
| Na2SO4 |  |  |
| Co3(PO4)2 |  |  |
| CF4 |  |  |
| Ca(NO2)2 |  |  |
| N2O3 |  |  |
| VO2 |  |  |
| LiBr · 4H2O |  |  |
| SrO |  |  |
| Ag3P |  |  |
| H2O |  |  |
|  |  | cadmium nitride |
|  |  | tetraphosphorus triselenide |
|  |  | copper (IV) phosphate pentahydrate |
|  |  | zinc oxide |
|  |  | hydrogen monoiodide |
|  |  | aluminum chloride |
|  |  | potassium carbonate |
|  |  | tetraphosphorus decoxide |
|  |  | dinitrigeon trioxide |
|  |  | nickel (III) sulfide |
|  |  | tin (IV) chlorate |
|  |  | iodine pentafluoride |
|  |  | ammonium oxide |
|  |  | boron trifluoride |

**Part 2: Lewis Dot Structure & VSEPR:** Draw the appropriate Lewis structure for each compound. If the compound is ionic, cross out the 4 questions below. If the compound is covalent, answer the 4 questions below.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1) HBr | **ionic** or **covalent** | 2) Li2O | | **ionic** or **covalent** |
|  | |  | | |
| 1. VSEPR shape?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 2. Are there polar bonds? YES or NO 3. Is it a polar molecule? YES or NO 4. IMF present? dispersion dipole-dipole hydrogen | | 1. VSEPR shape?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_   1. Are there polar bonds? YES or NO 2. Is it a polar molecule? YES or NO 3. IMF present? dispersion dipole-dipole hydrogen | | |
| 3) LiF | **ionic** or **covalent** | 4) SeF6 | **ionic** or **covalent** | |
|  | |  | | |
| 1. VSEPR shape?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 2. Are there polar bonds? YES or NO 3. Is it a polar molecule? YES or NO 4. IMF present? dispersion dipole-dipole hydrogen | | 1. VSEPR shape?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 2. Are there polar bonds? YES or NO 3. Is it a polar molecule? YES or NO 4. IMF present? dispersion dipole-dipole hydrogen | | |
| 5) H2O | **ionic** or **covalent** | 6) GaBr3 | **ionic** or **covalent** | |
|  | |  | | |
| 1. VSEPR shape?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 2. Are there polar bonds? YES or NO 3. Is it a polar molecule? YES or NO 4. IMF present? dispersion dipole-dipole hydrogen | | 1. VSEPR shape?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 2. Are there polar bonds? YES or NO 3. Is it a polar molecule? YES or NO 4. IMF present? dispersion dipole-dipole hydrogen | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 7) PI3 | **ionic** or **covalent** | | 8) CO2 | | **ionic** or **covalent** |
|  | | |  | | |
| 1. VSEPR shape?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 2. Are there polar bonds? YES or NO 3. Is it a polar molecule? YES or NO 4. IMF present? dispersion dipole-dipole hydrogen | | | 1. VSEPR shape?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_   1. Are there polar bonds? YES or NO 2. Is it a polar molecule? YES or NO 3. IMF present? dispersion dipole-dipole hydrogen | | |
| 9) AsCl5 | **ionic** or **covalent** | | 10) NH4+ | **ionic** or **covalent** | |
|  | | |  | | |
| 1. VSEPR shape?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 2. Are there polar bonds? YES or NO 3. Is it a polar molecule? YES or NO 4. IMF present? dispersion dipole-dipole hydrogen | | | 1. VSEPR shape?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 2. Are there polar bonds? YES or NO 3. Is it a polar molecule? YES or NO 4. IMF present? dispersion dipole-dipole hydrogen | | |
| 11) Al2S3 | | **ionic** or **covalent** | 12) BBr3 | **ionic** or **covalent** | |
|  | | |  | | |
| 1. VSEPR shape?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 2. Are there polar bonds? YES or NO 3. Is it a polar molecule? YES or NO 4. IMF present? dispersion dipole-dipole hydrogen | | | 1. VSEPR shape?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 2. Are there polar bonds? YES or NO 3. Is it a polar molecule? YES or NO 4. IMF present? dispersion dipole-dipole hydrogen | | |

Explanations:

1. Explain why compound #5 and compound #8 are different shapes.
2. Explain why compound #7 and #12 are different shapes.

General information of each type of bond:

|  |  |  |  |
| --- | --- | --- | --- |
| **Type of Bond** | **Type of Elements?** | **Electron behavior** | **Properties** |
| **Ionic Bond** |  |  | * Brittle (easy to break) * \_\_\_\_\_\_\_\_\_ melting point * Conduct electrical current   (only when in aq solutions) |
| **Covalent Bond** |  |  | * \_\_\_\_\_\_\_\_ melting point * No electrical current |
| **Metallic Bond** |  |  | * \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  (easy to bend) * \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  (form wires) * Conduct electrical current |

\*remember how to do this\* Identify the atoms through use of their arrangement of electrons:

a) 1s22s22p63s23p1 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

b) [Ar]4s23d104p4 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

c) 1s22s22p63s23p64s23d9 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

d) [Xe]6s1 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Remember, anything that I taught you is fair game on the test. This review does **NOT** cover everything. This is BARE-BONES. If *this* review is confusing, then you NEED **HELP**.