Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period \_\_\_\_\_\_\_\_

**WEEK 22 AGENDA: Unit 5 (Covalent Compounds) course website: kachemistry.weebly.com**

|  |  |  |
| --- | --- | --- |
| **Date** | **Topic** | **Homework** |
| **PA** | **H** |
| M – Feb 9 | Drawing Lewis Dot Structures | Complete Class Work | Complete Class Work |
| T – Feb 10 | Molecular Geometry | Week 21 Agenda #11 | Week 21 Agenda #11 |
| W – Feb 11 | Bond Polarity | 1a-e, 2-4 | 1c-g, 2-4 |
| Th – Feb 12 | Intermolecular Forces | 5-9 | 5-9 |
| F – Feb 13 | Intermolecular Forces Cont. |  |  |

1. Complete the table:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Formula** | **Lewis Dot Diagram** | **Bonds** | **Lone Pairs** | **Polarity (Polar or Nonpolar?)** | **Geometry** |
| **a) HCN** |  |  |  |  |  |
| **b) NO2-** |  |  |  |  |  |
| **c) CH4** |  |  |  |  |  |
| **d) NH3** |  |  |  |  |  |
| **e) H3O+** |  |  |  |  |  |
| **f) C2H4** |  | **X** | **X** | **X** | **X** |
| **g) SO32-**  |  |  |  |  |  |

Electronegativity values



|  |  |
| --- | --- |
| **Bond Type** | **Difference inelectronegativities** |
| Nonpolar | 0.0 – 0.4 |
| Polar | 0.5 – 1.9 |
| Ionic | > 1.5 |

**Use the electronegativities in the periodic table above or on the back of your periodic table for the following questions:**

1. In your own words, what is electronegativity?
2. Describe the following bonds in the following compounds as ionic, polar, or nonpolar. \***If the covalent compound is polar:** denote the partially positive side with δ+ and the partially negative side with δ-.
	1. HBr d. H2O g. CO
	2. NaBr e. HI h. H2
	3. Br2 f. CaO i. MgS
3. The bonds between the following pairs of elements are covalent. Arrange them according to polarity, **listing the most polar bond first.**
	1. Cl—Cl d. Cl—O
	2. Cl—C e. Cl—H
	3. Cl—F
4. What is a hydrogen bond?
5. What causes dispersion forces?
6. Rank the following **inte**rmolecular forces from weakest to strongest: dipole-dipole, ionic forces, dispersion forces, hydrogen bonds.
7. Rank the following **intra**molecular forces from weakest to strongest: ionic bonds, polar covalent bonds, nonpolar covalent bonds.

|  |  |  |
| --- | --- | --- |
| **Compound** | **Ionic or Covalent** | **Name** |
| Li2O |  |  |
|  |  | Dinitrogen tetroxide |
| FeCO3 |  |  |
|  |  | Cobalt (II) sulfide |
| PH3 |  |  |
|  |  | Magnesium Bromide |
| P4S3 |  |  |

1. Fill in the following table: