**Chem4Bio Module 3 Worksheet**

1. Look at the chemical formula for each of the following compounds, then decide whether each compound contains only **Ionic** bonds, only **Covalent** bonds, or **Both** types of bonds

|  |  |
| --- | --- |
| **Chemical Formula** | **(Ionic / Covalent / Both)** |
| NaCl |  |
| HCl |  |
| NaNO3 |  |
| CH4 |  |
| NH3 |  |
| NaOH |  |
| H2O |  |
| CO2 |  |

1. **Five** of the compounds in Question #1 contain only covalent bonds. For **each** of those five compounds, do the following: i) Draw the structural formula for the compound, drawing the molecular shape as accurately as possible; ii) describe the bonds in the compound as **non-polar** bonds or **polar** bonds; describe the overall polarity of the molecule (either **non**-**polar molecule** or **polar molecule**).

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Structural Formula** | **Non-Polar or Polar Bonds?** | **Non-Polar or Polar Molecule?** |
| **1** |  |  |  |
| **2** |  |  |  |
| **3** |  |  |  |
| **4** |  |  |  |
| **5** |  |  |  |

1. Which of the five covalent compounds in Question #2 can undergo **hydrogen-bonding?** Why?
2. Which type of bonding is the *strongest* attractive force? (Circle one)

 **ionic bonding** **covalent bonding** **hydrogen bonding**

1. Which type of bonding is the *weakest* attractive force? (Circle one)

 **ionic bonding** **covalent bonding** **hydrogen bonding**