Name: _____ Per: _____ Date: _____

Covalent Molecules Essay Questions

Chemistry I

Using what you know about the properties of covalent molecules provide full explanations for the following:

1. Explain why covalent molecules are soft in flexible in comparison to ionic compounds. (HINT: You must talk about how they differ on a molecular level)

- Substances are soft and flexible when the particles have the ability to move past one another.
- Covalent molecules are composed of individual molecules
- That are not bonded together (like the ions in an ionic compound)
- This allows them to move past one another;
- Therefore, being flexible and soft.

2. What is the advantage of making sunblock slightly nonpolar? Provide a full explanation of the chemical principle involved.

- Like substances dissolve like substances
- Polar substances dissolve polar substances
- Nonpolar substances dissolve nonpolar substances
- Water is polar
- So, it will dissolve other polar substances.
- Sunscreen is nonpolar so it is not dissolved when swimming in water.

3. H_2O_2 and C_2H_6 have similar molar masses. One is a liquid at room temperature is a gas at room temperature. Which is which?

- H_2O_2 is a polar molecule.
- It will be a liquid.
- C_2H_6 is nonpolar.
- It will be a gas.
- H_2O_2 is composed of polar bonds.
- Polar bonds create dipoles.
- Dipoles come from the uneven sharing of electrons.
- This results in a partial positive and a partial negative.
- The dipoles from one molecule are attracted to dipoles in another.
- It takes energy to break these attractions between molecules.
- Resulting in a higher melting point.
- C_2H_6 is composed of nonpolar bonds.
- Electrons are shared equally.
- There are no dipoles
- Therefore, no attraction between molecules.
- Less energy to move molecules apart.
- Resulting in lower melting point.