Honors Chemistry Chapter 7/8 Study Guide Name:\_\_\_\_\_\_\_\_\_\_\_\_

I Can:

* Identify the three types of chemical bonding in molecules.
* Describe an ionic bond as a transfer of electrons.
* Describe a covalent bond as a sharing of electrons.
* Compare the location of electrons in a polar & nonpolar covalent compound.
* Determine the type of bonding within a molecule by using electronegativity values.
* Determine the type of bonding within a molecule by the elements that comprise it.
* Draw ionic bonding pictures given different combinations of ions.
* Describe the general properties of ionic compounds.
* Rate a series of compounds in order of increasing (or decreasing) lattice energy.
* Describe how the “sea of electrons theory” explains properties of metals.
* Draw orbital overlap diagrams to show where bonding occurs in covalent compounds.
* Identify which covalent bonds have the longest and shortest bond lengths.
* Describe the relationship between bond length and bond energy.
* Rate a series of molecules in order or increasing (or decreasing) bond energy.
* Draw Lewis structures for covalently bonded compounds.
* Draw Lewis structures for polyatomic ions.
* Identify a compound that will show resonance.
* Identify atoms that break the octet rule including the “bad boys” and phosphorous and sulfur.
* Explain why carbon can make four bonds instead of two using the concept of hybridization.
* Predict the geometry (shape) of a molecule or ion by drawing the structure and the location of dipoles.
* Predict the intermolecular forces that would predominate in different molecules.
* Explain why H2O has such different properties than H2S using the concept of hydrogen bonding.
* Describe the general properties of network solids, citing examples from everyday life.