**Test Date:** Friday 12/9/16

**Point Value:** 100 points (assessments)

**Resources:** Periodic table (w/ charges, groups, valence electrons, and covalent bonding prefixes)

**Physical Science Study Guide**

**Chapter 4 Test: The Structure of Matter**

* **4.1: Compounds and Molecules**
  + **Vocabulary**
    - Chemical bond
    - Chemical structure
    - Bond length
    - Bond angle
  + **Objectives**
    - Distinguish between compounds and mixtures
    - Relate the chemical formula of a compound to the relative numbers of atoms or ions present in the compound
    - Use models to visualize a compound’s chemical structure
    - Describe how the chemical structure of a compound affects its properties
* **4.2: Ionic and Covalent Properties**
  + **Vocabulary**
    - Ionic bond
    - Metallic bond
    - Covalent bond
  + **Objectives**
    - Explain why atoms sometimes join to form bonds
    - Explain why some atoms transfer their valence electrons to form ionic bonds, while other atoms share valence electrons to form covalent bonds
    - Differentiate between ionic, covalent, and metallic bond in terms of composition and what is happening with valence electrons
    - Compare the properties of substances with different types of bonds properties including relative melting point, ability to conduct electricity as a solid , and ability to conduct electricity when dissolved in water
* **4.3: Compound Names and Formulas**
  + **Vocabulary**
    - Ion
    - Covalent compound
    - Ionic compound
  + **Objectives**
    - Distinguish between ionic and covalent compounds when given the name or formula of a compound
    - Name and write formulas for monoatomic ions
    - Name and write formulas for simple binary ionic compounds
    - Name and write formulas for binary covalent compounds
* **4.4: Organic and Biochemical Compounds**
  + **Vocabulary**
    - Monomer
    - Polymer
  + **Objectives**
    - Relate the chemical structure of a polymer (ex: cross-linked chains of monomers) to its properties (ex: elasticity)
    - List 3 examples of synthetic polymers
    - List 3 examples of naturally occurring polymers