

Chapter 7

- ☺ 1. Know the difference between kinetic and potential energy.
- ☺ 2. Understand how kinetic energy varies with temperature.
- ☺ 3. Know that energy is involved in forming and breaking bonds.
- ☹ 4. Be able to define: system, surroundings, boundary, and insulated system.
- 5. Be aware that water has a larger heat capacity in general than many other substances.
- x 6. Know how enthalpy is affected by its sign.
- 7. Understand the idea of a state function.
- ✓ 8. Know how to determine overall enthalpy from an enthalpy diagram.
- ✓ 9. Be able to use Hess's Law to determine a reaction's enthalpy.
- ✓ 10. Be able to perform calculations using Joules and calories.
- ✓ 11. Be able to predict whether reactions will absorb or release energy.

Chapter 8

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What's
this
Not going
to need
- 1. Understand what constitutes the electromagnetic spectrum.
- 2. Know the significance of quantized energy levels.
- 3. Be able to utilize the Rydberg equation.
- 4. Know why the Bohr model of the atom was a good working model, and why it ultimately failed.
- 5. Understand the four quantum numbers, n , l , m_l and m_s .
- 6. Be able to visualize the physical manifestation of the quantum numbers ... size, shape, orientation and spin.
- 7. Know what the Pauli Exclusion Principle states.
- 8. Understand how electrons fill in orbitals.
- 9. Be familiar with the shapes of electron orbitals.
- 10. Be familiar with the concept of effective nuclear charge and how it affects size, IE and EA trends.
- 11. Know basic periodic trends for ionization energies.
- 12. Be able to write electron configurations given the atomic number and charge on a monoatomic species.
- 13. Know periodic changes in size of atoms and ions.
- 14. Know periodic changes in electron affinity.
- 15. Be aware that Noble gas configurations are especially stable.

Chapter 9

- 1. Define lattice energy.
- 2. Understand how ionic bonds form.
- 3. Understand the Octet Rule.
- 4. Define valence.
- 5. Draw Lewis structures of atoms and ions.



Whatever!