***Basic Statistics and Enzymes Possible FRQ’s***

You will see one of these FRQ questions on your next AP Biology exam. The rest you may see on the Short Answer section.

**“If you fail to plan…plan to fail.”**

1**.** **State** the First Law of Thermodynamics and use it to **explain** the energy relationship between the biological processes of photosynthesis and aerobic cellular respiration. Be sure to **identify** and **describe** which of these two reactions is exergonic and which is endergonic?

**2.** Most enzymes are globular and therefore tertiary in structure.

 **(a)** **Describe** the tertiary structure of proteins being sure to include the interactions between the side

 chains that contribute to its overall shape.

 **(b)** Explain how the tertiary structure of an enzyme allows it to perform its function.

 **(c) Compare** and **contrast** the effects of competitive and noncompetitive inhibition on enzyme action

 by explaining how each affects enzyme structure.

**3.** **(a)** What are enzymes and how EXACTLY do they affect chemical reactions. **Draw** and **label** an

 “idealized” graph to *help* you **explain** the difference between a catalyzed chemical reaction and a noncatalyzed chemical reaction in terms of the activation energy required. *(Fig. 6.13)*

 **(b)** **Draw** an “idealized” graph for each of the following to *assist* you in **explaining** the effect each

 on enzyme activity.

 **(i)** temperature

 **(ii)** pH

 **(iii)**  [substrate]

**4.** **Graph**, **Calculate** and **Compare** the rates of enzyme catalyzed reactions.

**5.** Basic Statistics Questions and Computations.