**Study Guide**

**Enzymes and Membranes**

**Lecture learning goals**

* Describe the properties of enzymes.
* Discuss how enzymes are involved in metabolism by distinguishing catabolism and anabolism.
* How does the structure of plasma membranes maintain the internal environment of the cell while still allowing some molecules to move across?

**Guiding questions**

1. List the 3 properties of enzymes. What type of macromolecule are most enzymes?

2. Explain how temperature, pH and inhibitors can affect enzyme activity.

3. Explain the roles of anabolic and catabolic pathways in metabolism.

4. What is the arrangement of phospholipids in the cell membrane? Why are they arranged in this manner?

5. What macromolecule is responsible for most of the functions of the plasma membrane? What are the 4 main types of these macromolecules and their functions?

6. How does your immune system tell the difference between your own cells and foreign cells such as bacteria?

**Blasts from the past (i.e. old test questions)**

Most enzymes can do many different types of reactions; they are multi-purpose tools.

A. True B. False

To make lab equipment sterile (i.e. free of bacteria and fungi), it is often heated to high temperatures in an oven. Considering what you have learned, why should heat harm the cells?

A. heat creates antibiotics that kill the cells

B. heat makes the cells explode and die

C. heat breaks down macromolecules so these organisms do not have food

D. heat destroys enzymes so cells can't function

Which of the following describes the principal components of the plasma membrane?

A. phospholipids, proteins, cholesterol

B. phospholipids, ribosomes, cell wall

C. triglycerides, proteins, cell wall

D. lipoproteins, proteins, cholesterol