

Spring 2007 Biology 111 In-Class Exam #1 - Cellular Communications **KEY**

The in-class portion of this exam is designed so that you can complete it in 20 minutes, but you may use the full 50 minutes. There are 3 pages for this exam, including this cover sheet. You are not allowed to use your notes, old tests, the internet, or any books, nor are you allowed to discuss the test with anyone until the in-class exam is completed at 11:30 am on Monday February 12. You may use a calculator and/or ruler for both portions of the exam. The **answers to the in-class exam must be hand written very neatly. If I cannot read your writing, then you will lose points because I cannot determine whether you have the right answer or not.**

-3 pts if you do not follow this direction.

Please do not write or type your name on any page other than this cover page.

Staple all your pages (INCLUDING THE TEST PAGES) together when finished with the exam.

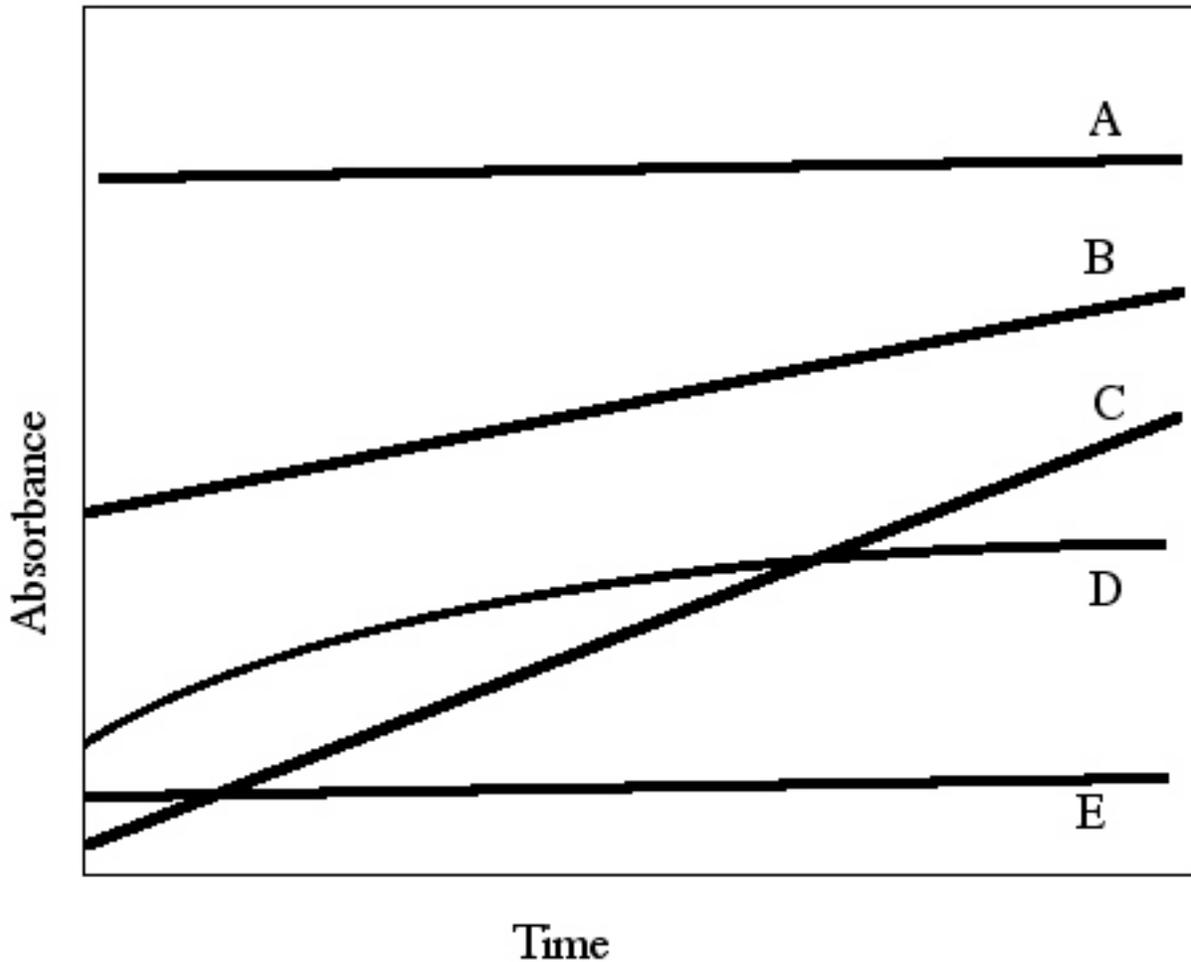
Name (please print):

Write out the pledge and sign:

The following statement is the official Honor Pledge of Davidson College: "On my honor I have neither given nor received unauthorized information regarding this work, I have followed and will continue to observe all regulations regarding it, and I am unaware of any violation of the Honor Code by others."

Lab Questions:

Enzyme Assay



3 pts.

1) Which line represents the enzyme reaction with the fastest catalytic activity? Circle the correct answer. *Note, there were 3 versions of this test, so your letter may differ, but this line is correct.*

- A B **C** D E impossible to determine

3 pts.

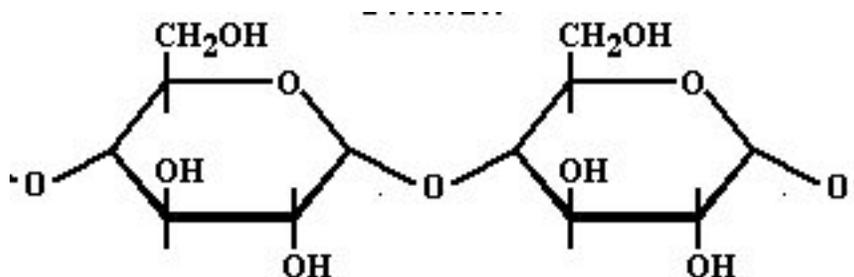
2) Which line represents the enzyme reaction where the reaction consumed all the substrate? Circle the correct answer.

- A B C **D** E impossible to determine

Lecture Questions:

5 pts.

3) In the space provided here, draw the structure of a disaccharide used in glycogen.



3 pts.

4) What is the name of the enzyme that modulates glycogen phosphorylase?

Phosphorylase kinase

3 pts.

5) What is name of the molecule that blocks the myosin binding sites located on actin?

tropomyosin

6 pts.

6) What is responsible for repolarizing a neuron and does not use ATP in the process?

K⁺ ions flowing out of the cell through voltage-gated K⁺ channels.

3 pts.

7) Name a substrate for phosphodiesterase.

cAMP

3 pts.

8) Name the product for adenylyl cyclase.

cAMP

3 pts.

9) What modulates protein kinase A and what type of modulation is this?

cAMP allosterically modulates PKA

Alternative question was: What modulates adenylyl cyclase and what type of modulation is this?

activated G protein via allosteric modulation