

Spring 2007 Biology 111 In-Class Exam #3 – BioEnergetics

There is no time limit on this test, though I have tried to design one that you should be able to complete within 20 minutes. You are not allowed to use your notes, old tests, any electronic sources, any books, nor are you allowed to discuss the test with anyone until all exams are turned in at 11:20 am on Wednesday April 18. You may use a calculator and/or ruler. If you do not write your answers in the appropriate location, I may not find them.

-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 full pledge and sign:

How long did this exam take you to complete (excluding typing)?

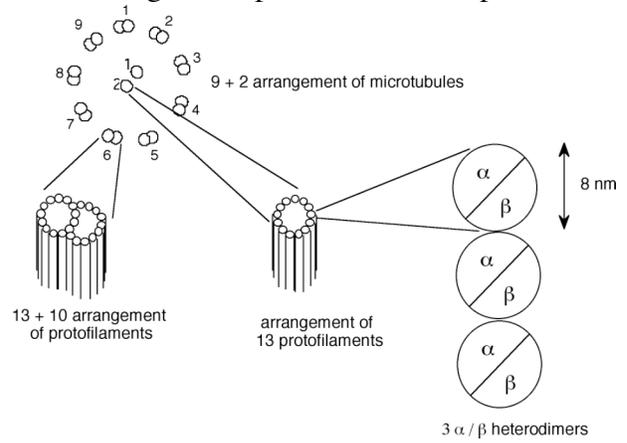
Lab Question:

4 pts.

1) If the flagella on a population of *Chlamydomonas* cells were growing at $\sim 0.25 \mu\text{m}$ (i.e., 250 nm) per minute, how many amino acids of tubulin were being added per minute to the pairs of growing flagella?

Answer box

Show your work:



Lecture Questions:

14 pts.

2) Starting with **pyruvate**, diagram the citric acid cycle with particular attention to energy, carbon, and all waste products.

4 pts.

3) List two possible products of fermentation and how many carbons are in each one.

1. _____ has ____ carbons

2. _____ has _____ carbons

3 pts.

4) $\text{Pi} + \text{ADP} \rightarrow \text{ATP} \quad \Delta G = \underline{\hspace{2cm}}$

3 pts.

5) List 3 parts of a photosystem.

1. _____

2. _____

3. _____

3 pts.

6) List 3 different pigments in plants.

1. _____

2. _____

3. _____

3 pts.

7) What genus of bacteria is responsible for reducing much of the nitrogen that we consume?
