

Spring 2008 Biology 111 Exam #2.5 KEY - Molecular Genetics In-Class Exam

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 (except as directed by this exam), any books, nor are you allowed to discuss the test with anyone until all exams are turned in by class on Friday March 28. **EXAMS ARE DUE AT BY 1:20 ON FRIDAY MARCH 28.** You may use a calculator and/or ruler. If you do not write your answers on the appropriate pages, I may not find them unless you have indicated where the answers are. There are 3 pages to this exam, including this cover sheet.

- 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)?

3 pts.

1) Draw a picture that illustrates the molecular cause for huntington's disease.

Looking for the glutamine repeats on the protein (not DNA), interacting with HAP1, and some notation that this interaction is too tight or protracted.

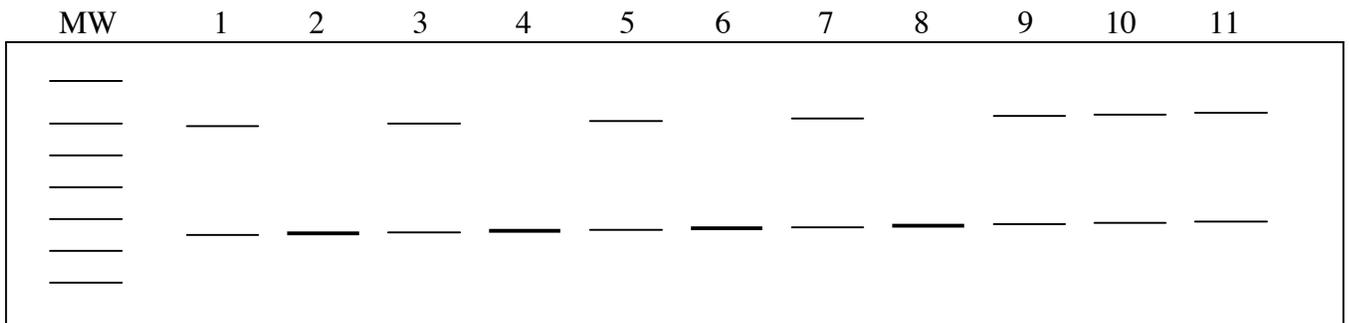
5 pts.

2) Draw a picture of two lung cells, one with CF and one wild-type. In each picture, include mucus, chloride ions, CFTR. Label all parts and which cell is which.

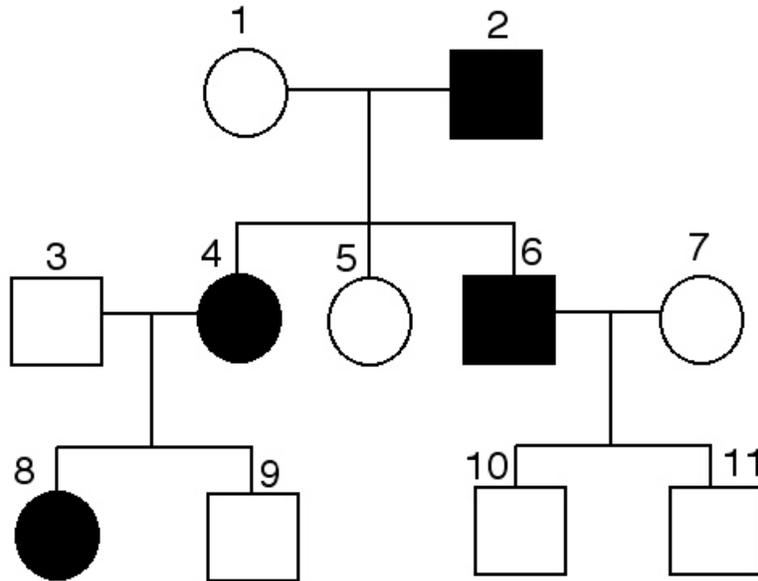
Looking for mucus on one side only, Cl⁻ ions in the wt mucus and not in the CF mucus, CFTR in the PM of wt cells and ER of CF cells.

4 pts.

3) Draw a picture of the Southern blot that shows the MET RFLP data for the family below. This family has many members with the disease. Draw your data here:



Bottom band in 7 not certain



3 pts.

4) Is it possible for a girl to have hemophilia given it is a sex-linked trait? Explain your answer.

Yes, it can either be a dominant disease, or be recessive and passed down from a father who had the disease AND a mother who had the disease or was a carrier for it.