

## GENERAL COMMENTS ON THE TEST:

See points # 6 and #7

If you have a number marked as #? and encircled by a question in your test, many people were doing the same thing, and my comment is listed according to the numbers below the double line. If you got less than a B on question 7, and particularly if you are a business major, consider that you lost your investment in avocado futures.

THERE IS STILL FORGIVENESS. If you present a good paper (see discussion section) and do MUCH better on the final, the final will be heavily weighted for your grade. To do well on the final, you MUST

- Demonstrate that you can read and interpret a simple graph correctly.
- Display understanding and evaluation of the material, as evidenced by good documentation of each argument that you make for each question, not just generalities.
- Answer each question by acknowledging and addressing the point of the question, the main principle that the question is trying to get you to see.
- Realize that you are responsible for material in the book and in lecture, and are prepared to use the principles that you have learned to document a new argument with the evidence and logic that you have acquired.

## TO PREPARE FOR THE FINAL:

- Prepare your answers in advance. You have the questions. Think about them and how you would answer them.
- If you are not certain what the question means or what the answer is, reread the appropriate chapter, look it up in the index, post a question online, or otherwise resolve the issue.
- Pay attention to bulleted points in lecture or in the book. They are bulleted for a reason, to help you to organize important concepts and comparisons.
- Pay attention to what I emphasize in lecture. I emphasize points because they are important and are likely to be tested.
- Define your terms at the beginning of your answer. It will help you to organize and focus your answer.
- Be sure you answer all parts of each question.
- Each question has a point. Wandering off toward “good feelings” without mentioning the point will get little credit.
- Document your arguments with evidence (facts and mechanisms). I cannot read into the answer what you do not say.
- Literacy in graph reading is a standard part of cultural literacy. Consider the explanation of graphs (<http://lockshinlab.org>, click on the Graphbook tab), up through “Non-linear functions” in Part 3, to be REQUIRED READING.

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The numbered comments:

- #1. **(REFERS PRIMARILY TO QUESTION 1)** Is there more to the theory of evolution than struggle for existence and survival of the fittest? Did Darwin add anything to the theory? How about natural selection of the most fit (define "fit") and descent with modification? Did Malthus say anything about evolution?

- #2. **(REFERS TO QUESTION 4)** Prepare your answers in advance. If you do not understand the terms, look them up in the book, since the questions come from the ends of each chapter (This one is discussed on pp 231-233 and is indexed as "genetic code"), listen in lecture, or ask on the discussion section. "Code" refers to the sequence of three bases that is translated into one amino acid, nothing else. **DEFINE YOUR TERMS AT THE BEGINNING OF THE ANSWER.** It will help direct your answer. **PAY ATTENTION TO POINTS EMPHASIZED IN LECTURE.**
- #3. **(REFERS TO QUESTION 7)** Which is cause and which is effect? The cause (independent variable) belongs on the X-axis (abscissa) and the effect (dependent variable) belongs on the Y-axis (ordinate). See the online explanation of graphs, as highly recommended in lecture and on the discussion section. This is basic knowledge for anyone.
- #4. **(REFERS TO QUESTION 6)** But what was the point of the experiment? Why was it important? It is nice that you found it interesting, but it was mentioned for a purpose. For instance, the point of the Avery-McLeod-McCarty experiment was that the extractable transforming factor was DNA.
- #5. **(REFERS TO QUESTION 3)** Does not answer the question asked (how the sequence of genes on the chromosome was determined). See bulleted points on page 205 in book and extensive discussion in lecture. Define your terms. This will help you to focus on what is asked.
- #6. **(GENERAL POINT)** Logic is necessary to accept an idea. For instance, the delay in accepting the findings of the Avery-McLeod-McCarty experiment was that DNA could not logically carry enough information. Once the logic of its ability to reproduce itself became apparent (Watson-Crick), one had to find the logic of how it could carry information.
- #7. **(GENERAL POINT)** Make a list of your points, as bulleted lists such as are found in the book and lecture. It will help you to form and state your argument clearly.
- #8. **(REFERS TO QUESTION 7)** But your graph shows that rainfall controls temperature.
- #9. **(REFERS TO QUESTION 2)** For Darwin's inferences, see pages 158-163 of book or comments in lecture.