

Bio 213 — Evolution — Study Guide for Test 1 Spring 1998

I. General Information

A. Rules For Test Taking

1. Write in pen.
2. Make sure you have your name on the test.
3. **Be sure to show all your work - the correct answer on a problem without having shown work will not get credit. (This does not apply to all questions, just the problems that require mathematical steps to work out)**
4. Absolute quiet must be maintained during the test.
5. Papers are due on the instructors desk by the end of the class period as specified in the class schedule.. ANYONE CAUGHT WORKING ON THEIR TEST AFTER THIS TIME WILL HAVE THEIR PAPER DESTROYED AND NOT RECEIVE ANY CREDIT WHATSOEVER!
6. Read the questions carefully. Misreading is a primary cause of point loss on tests.
7. Raise your hand if you have a question, DON'T get up from your seat.
Instructor will circulate through the aisles; stop him if you have a question.
8. It is YOUR responsibility to make sure you have all the pages - the number of pages will be printed on the test.
9. Numbers in parentheses are point values of questions.
10. After turning in your test, you are free to go. (No lecture after the test)

B. Structure of the test: VISIT THE WEB SITE TO LOOK AT PREVIOUS TESTS -- THIS ONE WILL BE VERY SIMILAR TO THE FIRST TESTS FROM PREVIOUS TERMS.

1. Questions will include definitions, explanations, problems, short essay, and true/false or multiple choice.
2. There may be some problems requiring a numerical answer - BRING A CALCULATOR.
3. There will be some questions, worth approximately 35 points total, on material in the book that was NOT covered in class.
4. The other questions will be on material covered in lecture or on the video tapes (some of which was also covered in the book).

C. How to Study

1. Study your lecture notes — try to get the main principles that were covered firmly in mind. Ask yourself whether you could write a paragraph on each of the lecture topics. Practice writing a paragraph on some of the topics, just to get in the habit. Reread your English book if you need to review how a good paragraph is structured.
2. Read all the assigned chapters. First read the summary. Then read the text. Then reread the summary. Write 2-3 **paragraphs** summarizing the chapter in your own words, and write one paragraph expanding one of the summary sentences to a full paragraph with some details.
3. Study with a partner. Ask each other questions from lecture, and ask each other questions about the summary sentences from each chapter.

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II. What to Study

A. Lectures

- a. know the lecture notes (avail on line: see syllabus for details)
- b. know how to calculate the age of a rock (also in Ch. 19)
- c. know the geological time scale — the times and sequences of the eras, the sequences of the periods and which periods go with which eras.
- d. know the material on the video study guide, including that on human evolution.

B. Book

- a. read Chapters 1, 2, 3, and 19. Go over the CD timeline.
- b. you should know something about each subheading of each chapter (such as 1.3.4, 1.3.5 etc.)
- c. you should study the summary points very carefully — some questions will come from the chapter summary points. You are responsible for all of the chapter summary points from chapters 1, 2, 3, and 19.

III. Summary of Lecture Material

- A. Epistemology - the study of how we know what we know. You should be able to give the definition, and tell how religion, fine arts, science, and law judge their own areas of knowledge. You should be able to go into rather great detail about science, and what distinguished science from the other fields of human knowledge.
- B. Fossils: know how to calculate radiodate for a rock, given the decay rate and either the amount of material already decayed or the amount still remaining. You need to memorize the formula and bring a calculator. Know in which eras major groups of organisms flourished (trilobites, dinosaurs, mammals, birds, etc.). Why do fossil hunters favor desert areas?
- C. Evidence for evolution — in science, we look for evidence that explains. We automatically rule out supernatural, and generally rely upon uniformitarianism. The orders of fossils in rocks, their degree of similarity to living organisms decreasing with depth, radioactive dating, genetics, lack of perfect adaptation, vestigial structures all point to organic change through long periods of time. Also see Chapter 3.
- D. Human evolution: know the material on the video study guide. Know the names and dates for the human ancestors, which made tools, which made fire, which stood upright, which had small, medium and large brains.
- E. Genetics: you should know how to work simple one and two-locus genetics problems, understand what gene frequencies are, and be able to calculate gene frequencies. You should also know what mitochondria and chloroplasts are, what they have of genetic interest, and how fast they evolve.