

Test 4 Study Guide

Biology 11A

1. What led Georges Buffon to suggest that the Earth was more than 6000 years old?
2. What principle did Lamarck propose to explain animal morphologies such as the giraffe's long neck?
3. Describe Natural Selection in your own words.
4. What are homologous structures? How can we use them to relate people to cats or dolphins?
5. The Emu lives in Australia, but its cousin the Rhea lives in South America. They and their common ancestor are all flightless, so how do we explain their separation?
6. What type of developmental structure is your appendix? (Hint: it's there, but you don't really use it)
7. What type of evidence is there that connects whales with terrestrial origins?
8. What is embryology and what is the significance of the pharyngeal pouch?
9. What are scientists comparing when they say Chimpanzees are 99% similar to humans?

10. There's a great t-shirt that says "If you don't believe in evolution, ask your doctor about Methicillin-Resistant Staphylococcus Aureus." What does this mean, and how does it relate to Natural Selection?

11. What type of selection brought about my Aunt Kiki's pet Labradoodle?

12. What's the difference between gene flow and genetic drift? Under which category do the bottleneck and founder effects fall?

13. A biologist might study a certain "allele frequency" in the "gene pool" of a "population." Can you define all these terms?

14. What type of selection is exemplified by bodybuilders and Irish Elk?

15. Sketch a graph for each type of selection: directional, stabilizing, and disruptive

16. What weather conditions would dissuade time travelers from visiting prebiotic Earth? What 4 gases did early earth most likely contain?

17. What are the six steps that began life on this planet, to the best of our knowledge? (From the formation of organic molecules to LUCA)

18. What did Stanley Miller do, and based on figure 16.3A, what do you think his glasses prescription must have been?

19. You have billions of bacteria in your body, but do you have any archaea? What are the three types of archaea and where are they found? What category do the two share?

20. You found some “play-doh” and decided to make the three different shapes that bacteria take on. What would each shape be and what would you name it? Please use the correct scientific names not Fido or Fluffy.

21. From where might eukaryotes have gotten their chloroplasts or mitochondria?

22. Are you a photoautotroph or a chemoheterotroph? Define yourself.

23. Are slime molds prokaryotes or eukaryotes? What are their closest cousins?

24. How in the world could plants possibly survive on land?

25. Which came first, the bryophyte or the angiosperm? What are some big differences between them?

26. What are the reproductive parts on a gymnosperm? What about a fungus?

27. Why are some fungi and algae really “lichen” each other?

28. What major structure do we have that a lamprey doesn't?

29. What sets monotremes like the Duck-Billed Platypus apart from Eutherians?

30. What are some characteristics of prosimians, other than freakishly large eyes?

31. Why is it ridiculous to call Chimpanzees monkeys? What is the difference?

32. How old is "Lucy," and what type of Hominid was she?

33. Who was the first of the genus Homo to fashion tools?

34. When Hollywood makes the movie "Cro-Magnon vs. Neanderthal," who will win, assuming it's historically accurate plot-less tripe?

35. What support is there for the "Out of Africa" hypothesis?

36. What were the three big steps in the development of Human culture, and what allowed for this evolution?