

Taxonomy, Evolution and Human History Study Guide

1. Name all five kingdoms.
2. Who is Linnaeus? Name the seven taxa in order from broadest to most specific.
3. What is binomial nomenclature?
4. The species of finches that Charles Darwin found displayed different structural adaptations. One of the adaptations that Darwin noted was the:
5. Which is a major concept included in Lamarck's theory of evolution?
6. Describe how each of the following affects the ability of a trait to "survive" over time:
 - a. inheritance of natural variations.
 - b. inheritance of acquired characteristics.
 - c. natural selection.
 - d. survival of the fittest.
 - e. artificial selection.
7. The success or failure of a mutation to survive on earth depends on the _____.
8. Why might Darwin have hesitated to publish his concept of evolution by natural selection?
9. What is artificial selection?
10. What is a vestigial structure? Provide examples.
11. Describe Darwin's theory of evolution:
12. The two main sources of genetic variation are _____.
13. If a mutation introduces a new skin color in a lizard population, which factor might determine whether the frequency of the new allele will increase?
14. To which other mammal are humans most closely related?
15. What evidence in living things suggests that many organisms have a common ancestor?
16. Examples of homologous structures are:
17. Name the ship Darwin sailed on and describe Darwin's theory of Natural Selection:
18. Darwin recognized that a _____, not an individual evolves.
19. Natural selection acts directly on (genotypes/phenotypes).
20. According to Darwin, the giraffe's long neck developed because:
21. What proportion of all species that have ever lived has become extinct?
22. In the past, mass extinctions encouraged the rapid evolution of surviving species because:
23. List the five periods where mass extinction took place.
24. What is a species?
25. What is *speciation*?
26. What is genetic drift? Bottlenecking?
27. How can you tell which species are most closely related in an evolutionary tree?
28. How can you tell which is the common ancestor on an evolutionary tree?
29. Define and provide examples of the following:
 - a. Adaptive radiation
 - b. Convergent evolution
 - c. Coevolution
30. What does cranial capacity infer about the brain of pre-humans and modern humans?
31. What was the genus and species of "Lucy"? Who discovered her fossilized remains? In what year?
32. Why do humans have big butts?
33. What did Mary Leakey find in Africa that further validated Johanson's find as the possible "missing link?"
34. Why are scientists like Jane Goodall interested in studying chimpanzees?
35. What is a: a.) biped? b.) pinniped? c.) quadruped?

ESSAY

Prepare for one of the following three essay questions to be on your exam:

- 1.) Explain Lamarck's "principle of use and disuse." Provide examples in your explanation.
- 2.) Name the three properties scientists study to determine whether different species share a common ancestor.
- 3.) How does Darwin's "principle of descent with modification" explain the characteristics of today's species?