

BIOLOGY 30 REVIEW

EVOLUTION & CLASSIFICATION

1. What is evolution? List 3 characteristics of evolution.
2. a) Use Lamarck's theory of Acquired Characteristics to explain how a zebra got its stripes.
b) Use Darwin's theory of Natural Selection to explain how a zebra got its stripes.
c) How are these theories similar? Different?
3. Explain how each of the following causes variations within a species: mutations, migration, genetic drift.
4. Differentiate between geographic isolation and reproductive isolation. Give an example for each.
5. What 6 pieces of evidence do we have that evolution occurs?
6. How do homologous and analogous structures differ? Give examples.
7. Define population, species, gene pool, gene frequency and genotype frequency
8. Be able to calculate gene & genotype frequencies using Hardy-Weinberg Law (**back of page)
 $p + q = 1$ $p^2 + 2pq + q^2 = 1$
9. Differentiate between Stabilizing Selection, Directional Selection, and Disruptive Selection.
10. What is the theory of continental drift? Using examples, explain how it supports each of the 3 world patterns organism distribution.
11. Which rate of evolution is supported by the fossil record? What are the 3 types of evolution.
12. Describe how Lucy provided proof that apes and hominids evolved from a common ancestor.
13. What are the 3 schools of Evolution? Briefly, outline their beliefs.
14. Be able to discuss pros and cons of advancements in selective breeding as it relates to species preservation.
15. What is taxonomy? What is the basis for modern taxonomy?
16. Discuss the importance of the use of scientific names in the study of biology.
17. What is binomial nomenclature? Who developed it? Differentiate between a species and a breed.
18. What are the major classification groups from broadest to most specific? Which of the groups are used in the scientific name of an organism?
19. What characteristics do biologists use to sort organisms into Domains? Kingdoms?
20. What is a cladogram? A phylogenetic tree? How are they useful in the study of taxonomy?
21. What is a dichotomous key? Create a dichotomous key for the following organisms: dog, horse, cow, cat, frog, salamander, turtle, spider, snake.

