

## Evolution Review

Last Name \_\_\_\_\_ First \_\_\_\_\_

Period \_\_\_\_\_

1. Change over time is known as \_\_\_\_\_.
2. One of Darwin's ideas presented in his book *The Origin of Species* was that species change over time by \_\_\_\_\_ selection.
3. Making venom or secreting slime are examples of \_\_\_\_\_ adaptations.
4. The \_\_\_\_\_ determines if a trait is good or bad.
5. \_\_\_\_\_ dating shows fossils in the rock layers relative to other fossils, while \_\_\_\_\_ dating measures the age of fossils using radioactive isotopes.
6. The species of finches that Darwin observed differed in the shape of their beaks. According to Darwin, all of these species probably had a \_\_\_\_\_ ancestor.
7. \_\_\_\_\_ is the process which a population becomes better suited to its environment.
8. Variation in genotype is caused by recombination of genes as a result of \_\_\_\_\_.
9. \_\_\_\_\_ is the movement of alleles into or out of a population due to migration.
10. Do individual organisms evolve? \_\_\_\_\_
11. Explain 2 ways of dating fossils.
  
12. The fossil record helps to create the \_\_\_\_\_ time scale.
13. \_\_\_\_\_ is a unique fossil that lived during a specific time.
14. The age of fossils can sometimes be determined by measuring the amount of specific \_\_\_\_\_ in the fossil bones.
15. Geographical distribution of certain species is known as \_\_\_\_\_.
16. Structures that have different uses in the adult, but come from the same tissue in the embryo are known as \_\_\_\_\_ structures.
17. Structures that have identical functions but have no embryo tissue in common are known as \_\_\_\_\_ structures.
18. A structure with no useful purpose is known as a \_\_\_\_\_.
19. Mitochondrial DNA is only inherited from the \_\_\_\_\_ which allows tracing of a direct genetic line.
20. Give an example of a vestigial organ. \_\_\_\_\_
21. \_\_\_\_\_ speciation occurs when new species arise as a result of geographic isolation.
22. Give an example of a homologous structure in whales. \_\_\_\_\_
23. Name the main factors that contribute to natural selection.
  
24. \_\_\_\_\_ are the smallest unit that can evolve.
25. Characteristics that make an organism more suited to its environment are \_\_\_\_\_
26. Name 3 ways genetic variation can take place.
  
27. The most common form of evolution is gradualism, however some organisms like the stickle back fish exhibit \_\_\_\_\_ equilibrium.

28. Overpopulation of offspring results in competition for \_\_\_\_\_ resources.
29. A population will experience its full biotic potential when resources are \_\_\_\_\_.
30. Traits that allow organisms to \_\_\_\_\_ become more common in a population.
31. Are natural selection and evolution the same thing? \_\_\_\_\_
32. \_\_\_\_\_ is change in alleles in small populations due to random events.
33. Explain why random mating does not support the idea that evolution continues to occur.

**34. TABLE 1 CYTOCHROME C AMINO-ACID SEQUENCE DIFFERENCES**  
**10PTS**

| Vertebrate | Number of differences from human cytochrome c |
|------------|---|
|            | Monkey - 0                                    |
|            | Rabbit - 4                                    |
|            | Horse - 6                                     |
|            | Chicken - 7                                   |
|            | Turtle - 8                                    |
|            | Frog - 8                                      |
|            | Shark - 13                                    |

Which organism is the most closely related to the human? \_\_\_\_\_

Which organism is the least closely related to the human? \_\_\_\_\_

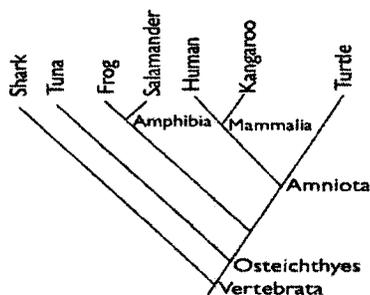
If the monkey and the human have no differences in their cytochrome c, how do we know that their proteins are NOT identical? \_\_\_\_\_

35. Nonrandom mating can result in this \_\_\_\_\_
36. List 3 resources organisms may compete for.
37. This occurs when more offspring are produced than can survive. \_\_\_\_\_
38. What occurs when organisms are not "fit"? \_\_\_\_\_
39. List 3 natural occurrences that can affect populations.
40. The largest group of individuals that can breed is known as \_\_\_\_\_.
41. \_\_\_\_\_ is the evolution of a new species.
42. Stabilizing selection acts to maintain a certain \_\_\_\_\_ in a species' population.
43. \_\_\_\_\_ is when two different species that live close evolve together.
44. One species of finch evolving into many different species is an example of \_\_\_\_\_ evolution.
45. A dolphin and a shark have similar traits even though they are very different animals. This pattern of evolution that results when two unrelated species begin to appear similar because of environmental conditions is \_\_\_\_\_ evolution.
46. The evolution from a common ancestor to a variety of species is an example of \_\_\_\_\_ evolution.
47. \_\_\_\_\_ is when the rate of extinction increases with respect to the rate of speciation.
48. Small populations are most susceptible to loss of genetic variability as a result of \_\_\_\_\_ drift.
49. Behavior that increases the individuals or groups ability to survival \_\_\_\_\_

50. \_\_\_\_\_ growth or movement in a plant in response to a stimulus.
51. Give an example of a learned behavior. \_\_\_\_\_
52. Give an example of a conditioned behavior. \_\_\_\_\_
53. Explain why group behavior evolved.
54. Explain cooperative hunting.
55. A plant's response to light is called \_\_\_\_\_
56. An organism's relative fitness is measured by its contribution to the \_\_\_\_\_ of the next generation.
57. All genetic information in a population is known as a \_\_\_\_\_.
58. Adaptations are \_\_\_\_\_ that make an individual suited to its environment.
59. Name the 3 types of natural selection. \_\_\_\_\_
60. Human birth weight is an example of this type of selection. \_\_\_\_\_
61. Antibiotic resistant bacteria is an example of this type of selection. \_\_\_\_\_
62. Size of male salmon is an example of this type of selection. \_\_\_\_\_
63. \_\_\_\_\_ selection acts to push for directional change in a species' population.
64. Diagram a graph that represents stabilizing selection. Which phenotypes are the most fit?

65. Diagram a graph that represents directional selection. Which phenotypes are favored?

66. Diagram a graph that represents disruptive selection. Which phenotypes are favored?

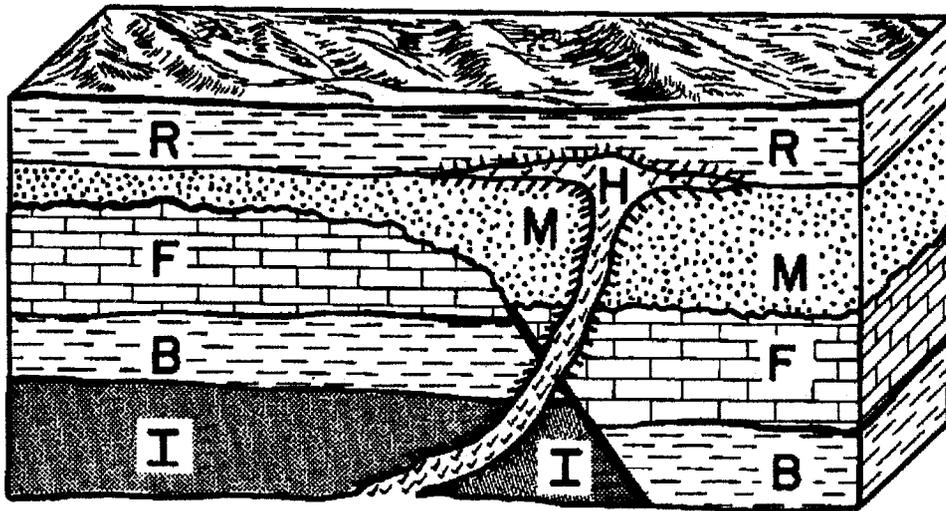
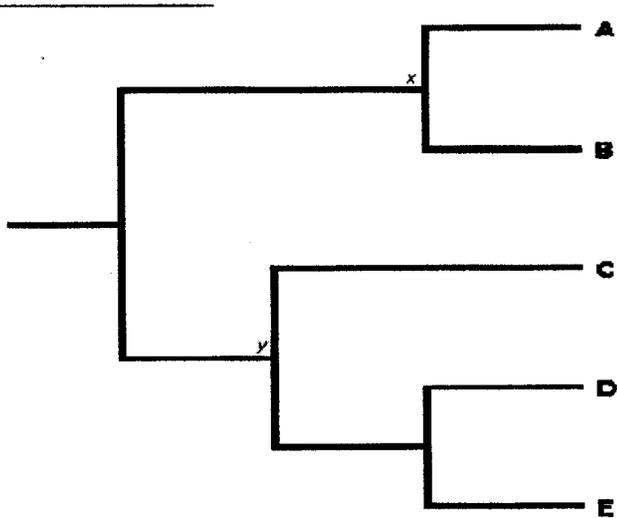


67.

A. What is the common ancestor of the human and the kangaroo? \_\_\_\_\_

B. What is the common ancestor of the kangaroo and the turtle? \_\_\_\_\_

68. According to the phylogenic tree below, which is more closely related, A and C, C and D, or D and E?



69. Use the diagram above to answer the questions below.

A. Which letter represents the layer that is the oldest? \_\_\_\_\_

B. Which happened more recently? \_\_\_\_\_