

Chapter 15/16 Review Sheet

1. What is evolution? process by which modern organisms have descended from ancient organisms
2. What is a theory? A well supported testable explanation of phenomena that have occurred in the natural world
3. What was the name of the ship that took Darwin on his voyage? HMS Beagle
4. During his travels, Darwin made numerous observations and evidence that led him to propose a hypothesis about the way life changes over time.
5. What are fossils? preserved remains of ancient organisms
6. True or False: All fossils look identical to organisms still alive today.
7. What chain of islands did Darwin make some of his most substantial observations? Galapagos
8. Darwin observed that the characteristics of many animals and plants varied noticeably among the different islands of the Galapagos.

Matching

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| 9. <u>b</u> Hutton | a. Explained evolution by the theory called selective use and disuse |
| 10. <u>d</u> Lyell | b. Proposed the Earth had to be much more than a few thousand years old. |
| 11. <u>a</u> Lamarck | c. Published a book about the increasing human population growth. |
| 12. <u>c</u> Malthus | d. Explained how geological features could be built up or torn down over time |

13. How did the understanding of geology influence Darwin? (2 major points)
 * If Earth could change over time, life can change as well
 * It would take many years for life to change
14. Explain the theory of use and disuse (remember the crab claws)
 * organisms acquire or lose traits during their lifetime. These traits could then be passed on to their offspring
15. Lamarck proposed that all organisms had an innate tendency toward complexity and perfection

16. True or False: Lamarck correctly explained how evolution occurred.

17. True or False: Lamarck's work was useless for other scientists.

18. Malthus reasoned that if the human population continued to grow unchecked, sooner or later there would be insufficient living space and food for everyone.

19. How did the work of Malthus influence Darwin?
 * If all offspring from plants + animals survived, they would overtake the world

20. True or False: Darwin published his book right away.

21. Explain how Alfred Wallace "helped" Darwin publish his work. Wrote an essay to Darwin → summarized Darwin's work → Darwin published work later that year
22. What was the title of Darwin's book? On the Origin of Species
23. What 2 major points were made in Darwin's book?
 ✓ proposed mechanism for evolution → natural selection. * presented evidence that evolution has been taking place for millions of years → continues today
24. In Darwin's day, variations were thought to be unimportant. However, Darwin argued that this variation mattered.
25. Artificial selection is the selection by humans for breeding of useful traits from the natural variation among different organisms.
26. What is the struggle for existence?
members of each species compete regularly for to obtain food, living space, & other necessities of life
27. What is fitness? (in terms of evolution)
the ability of an individual to survive & reproduce in its specific environment
28. An adaptation is any inherited characteristic that increases an organism's chance of survival.
29. What happens to organisms that aren't well suited for their environment?
die or leave few offspring
30. What is meant by survival of the fittest?
Individuals that are better suited to their environment survive & reproduce most successfully
31. What is another term for survival of the fittest?
Natural Selection

Matching

32. B Descent with modification
33. C Common descent
34. A Embryology
- a. Similarities in early development
- b. Each living species has descended, with changes, from other species over time
- c. All living organisms are related to one another.
35. How did Darwin use fossils to explain evolution? * Comparing fossils from older layers from younger layers, life has changed over time.
36. Darwin decided that all Galapagos finches could have descended with modification from a common mainland ancestor.
37. Explain why organisms on different continents evolved similar features.
 * living under similar ecological conditions, they were exposed to similar pressures of natural selection
38. What are homologous body structures?
 * structures that have different mature forms but develop from
39. What are vestigial organs?
 * organs that have been reduced in size and no longer serve a function
40. Individual organisms differ, and some of this variation is heritable.
41. What do all organisms compete for?
limited resources

42. What does the process of natural selection caused organisms to do over time? change over time
43. Species alive today are descended with modification from ancestral species that lived in the distant past.
44. This process, by which diverse species evolved from common ancestors, unites all organisms on Earth into a single tree of life.
45. Evolutionary theory continues to change as new data is gathered and new ways of thinking arise.