

What is Evolution?

Questions

- 1) After reading the first paragraph, is the author's intent to explain evolution or define evolution?
- 2) Explain your answer question #1
- 3) What is the first definition given for biological evolution?
- 4) Ontogeny is the development of an organism from fertilization to adulthood. Is ontogeny evolution?
- 5) Explain your answer to question #4 using the information in paragraph #2.
- 6) Does evolution refer to populations or individuals?
- 7) Explain your answer to question #6
- 8) What is a common definition of evolution found in biology textbooks?
- 9) What do biologists mean when they say they have observed evolution?
- 10) Humans DID NOT evolve from chimps and we DID NOT evolve from monkeys. We share a recent common ancestor with chimps and a more ancient common ancestor with monkeys. When biologists say humans and chimps have evolved from a common ancestor, what do they mean?
- 11) Are definitions of evolution outside of the scientific community accurate?
- 12) What does the author claim not believing in evolution is equivalent to?

13) According to the author, does belief in evolution exclude belief in religion?

14) Explain your answer to question #13

There are several explanations for the fact of evolution. Recall that an explanation that has survived rigorous testing is called a theory and theories are highly unlikely to be incorrect. The only theory that can explain adaptive evolution is Evolution by Natural Selection. Adaptations are characteristics such as camouflage that help an organism survive in its environment. Evolution by Natural Selection can be defined in various ways. Richard Dawkins once defined it as, "nonrandom survival of randomly varying instructions for building embryos." Notice that Evolution by Natural Selection has a random component, but the mechanism is NOT random.

15) What is a theory?

16) What is the only theory that can explain adaptive evolution?

17) Explain why Evolution by Natural Selection is NOT a random process.