

Answer to iClicker Question #6A (Evolution 9)

Which of the following statements are true?

- A. The amino acid sequence of any given enzyme is the same in all organisms. *This is false; the sequences are often different.*
- B. Any change in the amino acid sequence of a protein will cause it to be non-functional. *This is false; some mutations make enzymes more functional while others have no effect.*
- C. If there is a difference in the amino acid sequence of a given enzyme in two organisms, it reflects the fact that one is fitter than the other. *While this is sometimes true, it can also be due to neutral mutations as well.*

Therefore, the only correct answer is (E).

Answer to iClicker Question #6B (Evolution 9)

- A. This is required - otherwise the 'molecular clock' would not run at a consistent pace & you could not use # of substitutions to estimate how long ago the last common ancestor lived.
- B. This is required - otherwise comparing sequences & counting differences would be meaningless.
- C. This is NOT true - some mutations change the protein sequence, others do not.
- D. This is required - otherwise the mutations will not accumulate over time at a smooth rate.

So the only correct answer is (C).