

Section 2.4 The Value of Variation - Answer Key

- 1) Why do plants and animals exist today? **They exist today because their ancestors reproduced sexually or asexually.**

- 2) How many cells are required to reproduce asexually by mitosis? **Asexually reproduction only requires a single cell to divide by mitosis.**

- 3) Which type of reproduction requires more energy? **Sexual reproduction requires more energy.**

- 4) As a result, **fewer** offspring are produce by **sexual** reproduction.

- 5) What can bad weather, disease, or inadequate food do to organisms in a population? **They can stress organism in a population.**

- 6) What is a good example of variation that affects human survival? **Resistance to infectious disease is a good example.**

- 7) What was a major cause of death in humans 100 years ago? **Bacterial infections were a major cause of death in humans 100 years ago.**

- 8) I f you catch strep throat, what is the environment for the bacteria? **Your body is their environment.**

- 9) What would happen if you caught strep throat before 1940? **You would be sick for weeks while your immune system struggled to kill them off.**

10) What would happen if you caught strep throat just after 1950? **You would likely use an antibiotic to quickly destroy the population.**

11) Why may your doctor have difficulty finding an antibiotic to destroy streptococcus bacteria in your throat? **The bacteria may have become resistant to common forms of antibiotics.**

12) Define conjugation. **Conjugation is the transfer of DNA by cell-to-cell contact.**

13) What has conjugation allowed? **Conjugation has allowed antibiotic resistant individuals to pass on their DNA along to other Streptococcus bacteria.**

14) Is variation always an advantage? **Yes, because variation allows some individuals to survive to produce a new generation, even if their environment changes.**