

Standard 5 Objective 1 Relate principles of evolution to biological diversity

14 Question(s)
Test ID: 2142483956

Name: _____

Date: _____

- 1) What is the major reason that biodiversity is important in nature?
 - A. It increases the population
 - B. It makes the earth prettier
 - C. It makes ecosystems more stable
 - D. It gives humans more resources
 - E. It narrows the food web
- 2) Mating two dogs of the same breed to get a certain hair color is an example of
 - A. crossbreeding
 - B. natural selection
 - C. selective breeding
 - D. selective coloration
- 3) The desirable characteristics of two wheat plants of different varieties may be combined in the offspring by
 - A. adaptation
 - B. grafting
 - C. cross-pollination
 - D. self-pollination
- 4) When a breeder chooses only the best animals or plants for mating, he makes use of the method of
 - A. crossbreeding
 - B. sex linkage
 - C. mutation
 - D. selection
- 5) Farmers use only tomato plants that will produce the biggest and most abundant crop. This is an example of:
 - A. adaptation
 - B. artificial selection
 - C. mutation
 - D. natural selection
- 6) Which of the following is NOT an example of selective breeding?
 - A. in vitro fertilization
 - B. hybrid corn
 - C. Shetland pony
 - D. Siamese cat
 - E. seedless orange
- 7) A group of squirrels were living together in the same forest. Because of an earthquake the forest was split into two separate forests divided by a large, rapid river. Squirrels were separated equally between the two different forests. Millennia later these two populations of squirrels were two different species. Which of the following would be the most plausible explanation?
 - A. Evolution has occurred because the squirrels became more complex over time
 - B. Evolution has occurred because squirrel populations diverged over time
 - C. Random mating has occurred because there were half as many squirrels to mate with
 - D. Ionizing radiation from the sun has caused mutations in one group of squirrels
 - E. Artificial selection has occurred because the environmental pressures for the first group of squirrels was different than those for the second
- 8) Birds are an important indicator of the health of our environment. In the 1960s Rachel Carson wrote about the use of DDT, a pesticide, which accumulated progressively in the food chain and harmed many unintended organisms such as birds. Her work was used to help save predatory birds such as eagles and osprey by reducing and often changing the chemicals farmers can use to spray their crops. What must she have done to document her work?
 - A. Discovered all the chemical characteristics of DDT and pesticides.

- B. Taken pictures of dead animals and told people that all animal deaths are related to the use of DDT and pesticides.
 - C. Documented the effect of radon and other gases on organisms in the food chain.
 - D. Counted the number of organisms in an area where DDT was used and compared it to the numbers in areas where it wasn't used.
- 9) Which answer BEST describes the likely future of our knowledge about genetic mutations?
- A. Knowledge about genetic mutations will probably stay the same because genetic mutations only happened in the past.
 - B. Knowledge about genetic mutations will probably stay the same because scientists have learned all there is to know about genetics.
 - C. Knowledge about genetic mutations will probably change because new technology will provide better information about genetics.
 - D. Knowledge about genetic mutations will probably not change because scientists do not like to change their way of thinking.
- 10) Which of the following does NOT show how use of selective breeding affects human life?
- A. The development of the disease-resistant potato.
 - B. The discovery of the plastics and nylon.
 - C. The domestication of animals.
 - D. The creation of new plants like day lilies.
- 11) Who would personally benefit the most from technological advances made with in vitro fertilization?
- A. a mad scientist
 - B. a childless couple
 - C. a wildlife biologist
 - D. a biotechnician
- 12) Marsupial mammals are found primarily in Australia. The theory of plate tectonics and evolution show that millions of years ago Australia, Antarctica, and South America were once joined as a single land mass which eventually broke apart. How do we know that those three continents were once joined together? What must scientists do to support their claim that the three continents were once joined together?
- A. Scientists must have observable evidence which is verified by other scientists.
 - B. The scientists are wrong. The continents were never together.
 - C. Scientists must recognize that some animals lay eggs for reproduction.
 - D. The scientist must have his/her work verified by satellite imagery.
- 13) During an extensive trip around the world, Charles Darwin observed data that eventually caused him to formulate his theory of evolution. Some of his greatest thoughts, however, actually came from consulting English farmers who bred animals for specific traits such as larger pigs or faster horses. Which of the following statements best describes his observations?
- A. The scenario is false -- since farmers were not scientists, they could not use scientific principles in their work.
 - B. The scientific practices are used by many non-scientists - including farmers.
 - C. All traits are genetic and are only passed to the next generation by natural means.
 - D. The interbreeding practices of farmers are unrelated to "science" and are of value only to other farmers.
- 14) Birds are an important indicator of the health of our environment. In the 1960s Rachel Carson wrote about the use of DDT, a pesticide, which accumulated progressively in the food chain and harmed many unintended organisms such as birds. Her work was used to help save predatory birds such as eagles and osprey by reducing and often changing the chemicals farmers can use to spray their crops. What does this scenario tell us about the scientist who discovered the relationship between chemicals and the environment?
- A. The experiments conducted by scientists on ecology were so disconnected that they did not contribute to the model of DNA.
 - B. The experiments conducted by the earlier scientists on ecology were not able to be verified, so they were discounted and not used.
 - C. Important knowledge about ecology was contributed by a woman.
 - D. The knowledge learned by scientists before the 1950s was not useful in determining any connections between chemicals and the environment.

