CONNECTICUT BIOLOGY · UNIT 3 · 25 QUESTIONS

Evolution and Diversity — Practice Test

This practice test was made by AI and there may be mistakes. If a question or answer looks wrong, use the Flag a mistake button to let Brett know so he can fix it.

1

On an island, finches with deeper beaks crack hard seeds in a drought and raise more chicks than finches with shallow beaks. Over many generations, deep beaks become more common in the population. What is this process called?

- A Adaptation
- B Variation
- C Natural selection
- D Fitness

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2 **A desert fox has very large ears that lose heat and help it hear prey moving underground. What is the best term for the large ears?**

- A Adaptation
- B Variation
- C Fitness
- D Speciation

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3 **In a population of beetles, some are green, some are brown, and some are speckled. What does this range of traits in the population show?**

- A Fitness
- B Speciation
- C Fossil
- D Variation

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4 **A salmon that produces 4,000 eggs that hatch has higher _____ than a salmon that produces 400 eggs that hatch. Which term fills the blank?**

- A Speciation
- B Fitness
- C Fossil
- D Homologous structure

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5 **A river splits a population of frogs in two. After many generations the two groups can no longer interbreed and produce fertile offspring. What has happened?**

- A Fossil
- B Homologous structure
- C Analogous structure
- D Speciation

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6 **A rock layer holds the skeleton of a fish that lived 200 million years ago. What is the skeleton an example of?**

- A Fossil
- B Homologous structure
- C Analogous structure
- D Vestigial structure

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7 **A human arm, a bat wing, and a whale flipper all contain the same set of bones, but they do different jobs. What kind of structures are these?**

- A Analogous structure
- B Homologous structure
- C Vestigial structure
- D Common ancestor

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8 **Bird wings and butterfly wings both let the animal fly, but they evolved separately and have different inner structures. What kind of structures are these?**

- A Vestigial structure
- B Common ancestor
- C Genetic drift
- D Analogous structure

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9 **Whales have tiny hip bones inside their bodies that no longer support walking. What are these bones an example of?**

- A Vestigial structure
- B Common ancestor
- C Genetic drift
- D Gene flow

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10 **Humans and chimpanzees share about 98 percent of their DNA and many of the same genes. What does this suggest the two species share?**

- A Genetic drift
- B Gene flow
- C Common ancestor
- D Bottleneck effect

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11 **In a small population of flowers, a storm kills most of the red-flowered plants by chance, not because red flowers are harmful. The next generation has far fewer red flowers. What caused this change?**

- A Gene flow
- B Genetic drift
- C Bottleneck effect
- D Founder effect

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12 **A few wolves from a northern pack join a southern pack and breed with it. Over time the southern pack gains alleles it did not have before. What is this movement of alleles called?**

- A Gene flow
- B Bottleneck effect
- C Founder effect
- D Artificial selection

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13 **A disease kills 95 percent of a seal population. The survivors breed, but their offspring show very little genetic variety. What is this loss of diversity called?**

- A Founder effect
- B Artificial selection
- C Antibiotic resistance
- D Bottleneck effect

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14 **Ten birds from a mainland population fly to a new island and start a population there. The island birds have much less genetic variety than the mainland birds. What is this called?**

- A Artificial selection
- B Antibiotic resistance
- C Founder effect
- D Biodiversity

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15 **Farmers breed only the cows that give the most milk, generation after generation. What is this human-chosen breeding called?**

- A Antibiotic resistance
- B Artificial selection
- C Biodiversity
- D Extinction

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16 **A patient stops taking antibiotics early. The surviving bacteria multiply, and the next infection does not respond to the same drug. What have the bacteria developed?**

- A Antibiotic resistance
- B Biodiversity
- C Extinction
- D Phylogeny

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17 **A scientist counts 3,000 different species in a rainforest and only 12 species in a nearby wheat field. What is she measuring?**

- A Extinction
- B Biodiversity
- C Phylogeny
- D Cladogram

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18 **The dodo was last seen in the 1600s, and no dodo has lived since. What has happened to the dodo?**

- A Phylogeny
- B Cladogram
- C Extinction
- D Natural selection

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19 **A scientist draws a branching tree showing how whales, hippos, and pigs are related through shared ancestors. What is this evolutionary history called?**

- A Cladogram
- B Natural selection
- C Adaptation
- D Phylogeny

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20 **A diagram branches to show which species share the most recent common ancestor. What is this diagram called?**

- A Cladogram
- B Natural selection
- C Adaptation
- D Variation

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21 **A population of moths has light and dark forms. Soot darkens the trees they rest on, and birds eat the light moths more often. What will most likely happen to the dark moths over time?**

- A They will become more common, because they survive and reproduce more.
- B They will change their DNA at will.
- C They will all turn light again.
- D They will stop reproducing.

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22 **A cactus stores water in a thick stem. A student says the thick stem is an adaptation. Is the student right, and why?**

- A No, adaptations only occur in animals.
- B Yes, it is a trait the cactus chose to grow.
- C Yes, it is a trait that helps the cactus survive in a dry environment.
- D No, the stem is a vestigial structure.

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23 **A farmer measures the height of 100 wheat plants. The heights range from 60 cm to 110 cm. What does this range show?**

- A Reproductive success in an environment.
- B Differences among individuals in a population.
- C Formation of a new species.
- D Remains or traces of an ancient organism.

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24 **Two beetles live in the same log. Beetle X has 30 offspring that survive to adulthood. Beetle Y has 3 offspring that survive to adulthood. Which beetle has greater fitness, and why?**

A Beetle X, because fitness is reproductive success.

B Beetle Y, because fitness is strength.

C Neither, because fitness is about size.

D Both, because fitness is the same for all beetles.

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25 **Two groups of the same bird species live on either side of a mountain range. After thousands of years they cannot produce fertile offspring together. What has occurred?**

A Remains or traces of an ancient organism.

B A structure with common ancestry but different function.

C Formation of a new species.

D A structure with similar function but different ancestry.

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ANSWER KEY

1. C
2. A
3. D
4. B
5. D
6. A
7. B
8. D
9. A
10. C
11. B
12. A
13. D
14. C
15. B
16. A
17. B
18. C
19. D
20. A
21. A
22. C
23. B
24. A
25. C

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