VIRGINIA BIOLOGY · UNIT 3

# Evolution and Diversity — Practice Test

**Virginia Biology • 25 questions**

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 **Natural selection acts on variation in a population when individuals with helpful traits are more likely to**

A Survive and reproduce

B Change their DNA at will

C Live forever

D Stop evolving

Understand It with Pulse | Flag a mistake

2 **In evolutionary terms fitness means an organism ability to**

A Run fast

B Survive and reproduce

C Stay large

D Eat many foods

Understand It with Pulse | Flag a mistake

3 **An adaptation is a trait that helps an organism**

A Change its genes in one lifetime

B Survive in its environment

C Avoid all predators

D Produce identical offspring

Understand It with Pulse | Flag a mistake

4 **Fossils provide evidence for evolution because they show**

A That all species are unchanged

B That DNA never changes

C That extinction never happens

D How organisms changed over time

Understand It with Pulse | Flag a mistake

5 **Homologous structures such as the forelimbs of a human a bat and a whale suggest**

A A common ancestor

B Identical environments

C No shared history

D Recent cloning

Understand It with Pulse | Flag a mistake

6 **Analogous structures such as bird wings and insect wings are similar because of**

- A Shared ancestry
- B Similar functions
- C Identical DNA
- D Same chromosome number

Understand It with Pulse | Flag a mistake

7 **A vestigial structure is a structure that**

- A Has a major new function
- B Appeared in one generation
- C Has lost most or all of its original function
- D Is found only in fossils

Understand It with Pulse | Flag a mistake

**8** **Similarities in early embryos of different vertebrates are evidence for**

- A Identical adults
- B No evolution
- C Common ancestry
- D Cloning

Understand It with Pulse | Flag a mistake

**9** **Two species with very similar DNA sequences most likely share a**

- A Common diet
- B Common habitat only
- C Common predator
- D Recent common ancestor

Understand It with Pulse | Flag a mistake

**10** **Speciation occurs when populations become unable to**

- A Share a habitat
- B Interbreed and produce fertile offspring
- C Eat the same food
- D Move between areas

Understand It with Pulse | Flag a mistake

**11** **Geographic isolation can lead to speciation when a barrier prevents**

- A Mutation
- B Photosynthesis
- C Gene flow between populations
- D Fossil formation

Understand It with Pulse | Flag a mistake

12 **The founder effect occurs when a small group starts a new population and the new population has**

- A More genetic diversity than the original
- B Reduced genetic diversity
- C No mutations
- D Identical alleles to all species

Understand It with Pulse | Flag a mistake

13 **A population bottleneck is a sharp drop in population size that can**

- A Increase genetic diversity
- B Reduce genetic diversity
- C Stop natural selection
- D Create new species at once

Understand It with Pulse | Flag a mistake

14 **The ultimate source of new genetic variation in a population is**

A Mutation

B Migration

C Selection

D Drift

Understand It with Pulse | Flag a mistake

15 **Gene flow between two populations tends to**

A Increase differences between them

B Make them more genetically similar

C Stop reproduction

D Cause extinction

Understand It with Pulse | Flag a mistake

16 **Antibiotic resistance in bacteria spreads mainly because resistant bacteria**

A Choose to mutate

B Survive treatment and reproduce

C Learn to resist

D Stop dividing

Understand It with Pulse | Flag a mistake

17 **On a cladogram species that share a more recent branching point are more**

A Distantly related

B Unrelated

C Closely related

D Identical

Understand It with Pulse | Flag a mistake

18 **A shared derived character is a trait shared by species descended from a**

A Common predator

B Common ancestor

C Common habitat

D Common diet

Understand It with Pulse | Flag a mistake

19 **Lamarck idea that traits acquired during a lifetime are inherited is not supported because**

A Acquired traits do not change DNA in gametes

B Organisms never change

C Environments never change

D Mutations never occur

Understand It with Pulse | Flag a mistake

20 **Darwin observed that finches on different Galapagos islands had different beak shapes suited to different**

A Colors

B Songs

C Nests

D Foods

Understand It with Pulse | Flag a mistake

21 **The process by which a single species gives rise to many species filling different niches is**

A Genetic drift

B Gene flow

C Adaptive radiation

D Artificial selection

Understand It with Pulse | Flag a mistake

22 **Artificial selection differs from natural selection because humans choose which organisms**

A Mutate

B Reproduce

C Migrate

D Become extinct

Understand It with Pulse | Flag a mistake

23 **A fossil layer that is deeper in undisturbed rock is generally**

A Younger

B Older

C Identical in age

D Unrelated to age

Understand It with Pulse | Flag a mistake

24 **After two half lives what percent of a radioactive sample remains**

ANSWER

Understand It with Pulse | Flag a mistake

25 **In a population the frequency of allele A is 0.6 and of allele a is 0.4 Under Hardy Weinberg conditions the expected frequency of heterozygotes is 2 times 0.6 times 0.4**

ANSWER

Understand It with Pulse | Flag a mistake

# ANSWER KEY

| | | | | | |
|---|---|---|---|---|---|
| **1.** | A | **10.** | B | **19.** | A |
| **2.** | B | **11.** | C | **20.** | D |
| **3.** | B | **12.** | B | **21.** | C |
| **4.** | D | **13.** | B | **22.** | B |
| **5.** | A | **14.** | A | **23.** | B |
| **6.** | B | **15.** | B | **24.** | 25 |
| **7.** | C | **16.** | B | **25.** | 0.48 |
| **8.** | C | **17.** | C | | |
| **9.** | D | **18.** | B | | |

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