BIOLOGY · NEW HAMPSHIRE

# Biology
## Practice Test

### Unit 3: Evolution and Diversity

25 Questions

Original practice test based on the New Hampshire curriculum. Work through each question, then check your answers at the end.

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.

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Question 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

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Question 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

Question 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

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Question 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

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Question 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

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Question 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

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Question 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

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Question 8

Similarities in early embryos of different vertebrates are evidence for

A) Identical adults

B) No evolution

C) Common ancestry

D) Cloning

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Question 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

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Question 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

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Question 11

Geographic isolation can lead to speciation when a barrier prevents

A) Mutation

B) Photosynthesis

C) Gene flow between populations

D) Fossil formation

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Question 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

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Question 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

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Question 14

The ultimate source of new genetic variation in a population is

A) Mutation

B) Migration

C) Selection

D) Drift

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Question 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

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Question 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

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Question 17

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

A) Distantly related

B) Unrelated

C) Closely related

D) Identical

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Question 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

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Question 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

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Question 20

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

A) Colors

B) Songs

C) Nests

D) Foods

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Question 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

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Question 22

Artificial selection differs from natural selection because humans choose which organisms

A) Mutate

B) Reproduce

C) Migrate

D) Become extinct

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Question 23

A fossil layer that is deeper in undisturbed rock is generally

A) Younger

B) Older

C) Identical in age

D) Unrelated to age

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Question 24

After two half lives what percent of a radioactive sample remains

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Question 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

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# ANSWER KEY

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

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