PENNSYLVANIA BIOLOGY · UNIT 3

Evolution and Diversity — Practice Test

Pennsylvania 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

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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

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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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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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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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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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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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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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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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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

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

- **A** Mutation
- **B** Migration
- **C** Selection
- **D** Drift

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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

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

ANSWER

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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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