MARYLAND 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 **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		

© 2026 Brett Robbins. All Rights Reserved.