

Change Over Time Test

1 Fill in the Blank 5 points

A mutation is any change in a organism's

2 Multiple Choice 5 points

Mutations are important because they bring about

- genetic variation needed for a population to better adapt to their environment
- the death of the organism in which they develop
- benefits for the individual, not for the population
- changes in genotype, but not phenotype

3 True or False 5 points

Genetic differences within a species happen randomly

- True
- False

4 Multiple Choice 5 points

A trait that increases an organism's chances of surviving, reproducing, and passing on its genes is called a/an...

- Natural Selection
- Mutation
- Variation
- Adaptation

5 Essay 5 points

Do all mutations lead to adaptations? Why or why not?

6 Multiple Choice 5 points

What is a species?

- An organism that is adapted to its environment.
- A group of similar organisms that can mate with each other and produce fertile offspring.
- A group of organisms that live in the same area.
- A group of organisms that has gone extinct.

7

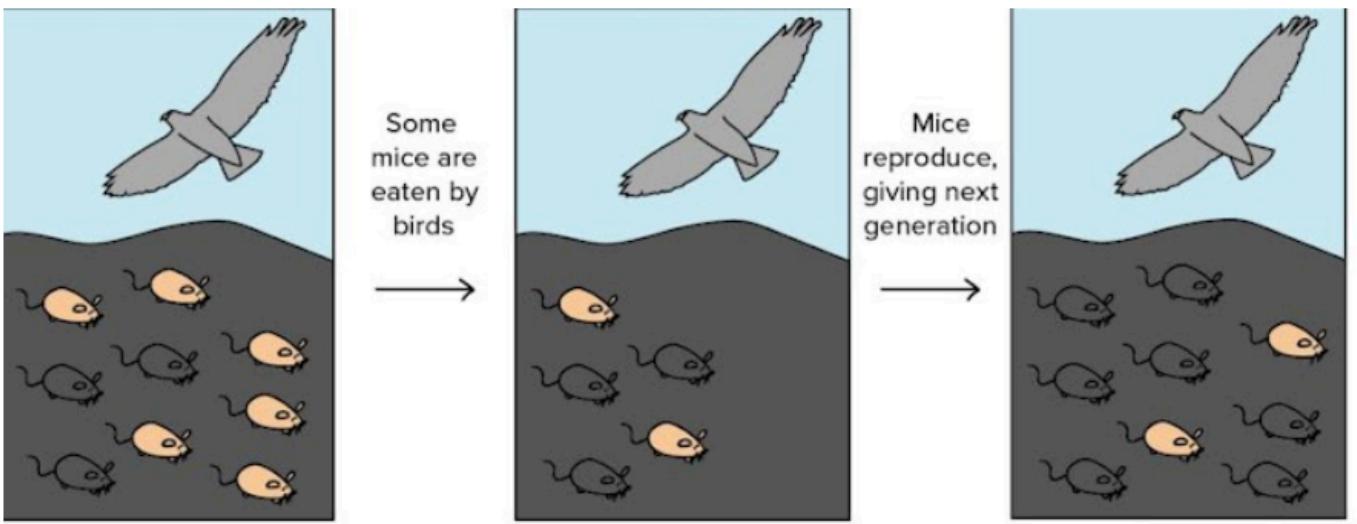
Multiple Answer 5 points

Select all of the processes that can cause a change in a population of living things

- Increased competition from invasive species
- A new climate
- Pollution
- Habitat Loss

8

Multiple Choice 5 points



Why is the mouse population changing over time?

- The light mice can reproduce at a faster rate than the dark mice.
- The hawks eat more dark mice than light mice because they can see the dark mice more easily.
- The hawks eat more light mice than dark mice because the light mice taste better.
- The hawks eat more light mice than dark mice because they can see the light mice more easily.

9

True or False 5 points

Individuals can change to adapt to their environment. (For example, a bear who did not already have dense fur can grow more fur to adapt to a colder environment.)

- True
- False

10

Multiple Choice 5 points

In this picture, the blue butterflies blend in with their surroundings more easily, so they have an easier time avoiding predators. Over time, a greater proportion of butterflies are blue because they were able to survive and pass on their DNA more effectively than other butterflies. This is an example of...



- Artificial Selection
- Natural Selection
- Mutation
- Variation

11

Multiple Choice 5 points

When an entire species dies out because they do not have the adaptations they need to survive in their environment, it's called...

- Extinction
- Variation
- Competition
- Mutation

12

True or False 5 points

Species changing over the course of many generations as a result of natural selection is called evolution.

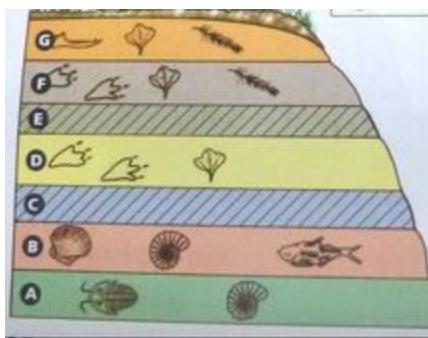
True

False

13

Multiple Choice 5 points

Look at the fossils in this picture. Which layer contains the youngest/most recent fossils?



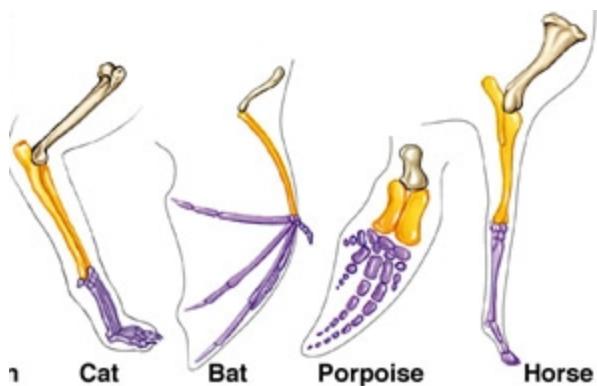
The yellow layer (d)

The pink layer (b)

The orange layer (g)

The green layer (a)

Scientists think that the similarities in bone structure in the picture below happened because...

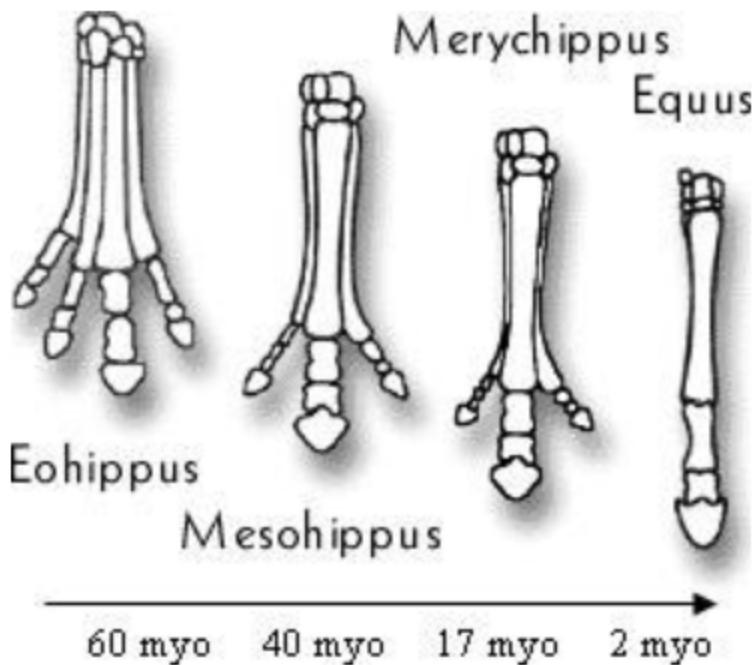


- These organisms looked identical as embryos.
- All of these limbs have the same purpose.
- These organisms can all turn into fossils.
- These animals evolved from a common ancestor.

15

Multiple Choice 5 points

Refer to the diagram depicting the fossil record for horses.



This record indicates that —

- ancestors of modern horses had more than one toe
- the evolution of horses' leg structure occurred very quickly
- horse evolution occurred within the last 2 million years
- there is no evidence of changes in structures in the evolutionary history of horses

16

Fill in the Blank 5 points

Consider a population of bears that naturally have differences in fur thickness. If the climate became colder, the number of bears with thicker fur would likely

increase

stay the same

decrease

17

Fill in the Blank 5 points

Species	DNA sequence
1	ATG CAG AAA TTC CGC
2	ACG GAG AAA TCC CCC
3	ACG CAG AAA TCC CCC

Use the drop-down menus to complete the paragraph.

Based on these DNA sequences, are most closely related because they have the nitrogenous bases in common.

- species 2 and 3
- species 1 and 3
- species 1 and 2
- least
- most

18

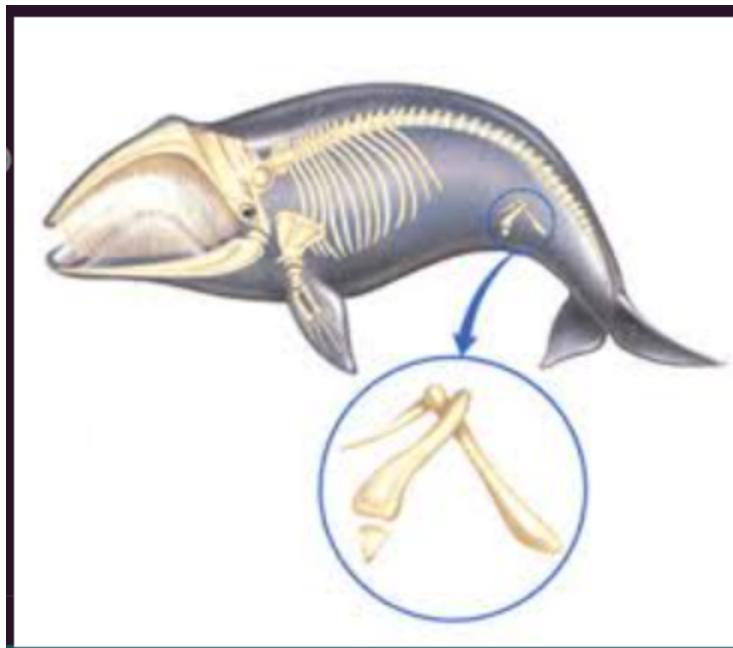
Multiple Answer 5 points

A ground-dwelling mammal lives on a small, flat tropical island in the Pacific Ocean. This organism makes its home by burrowing into the ground near the shore, and feeds on insects that can be found crawling on the ground. Which two reasons are likely causes for the organism to go extinct?

- The amount of rainfall on the island increases causing a small freshwater lake to form on the interior of the island.
- The amount of greenhouse gases in the atmosphere increases causing sea levels to rise permanently, flooding the island.
- The average high temperature of the island increases causing all predatory birds to migrate away from the island.
- A strong hurricane passes directly over the island causing major shoreline erosion and coastal flooding.

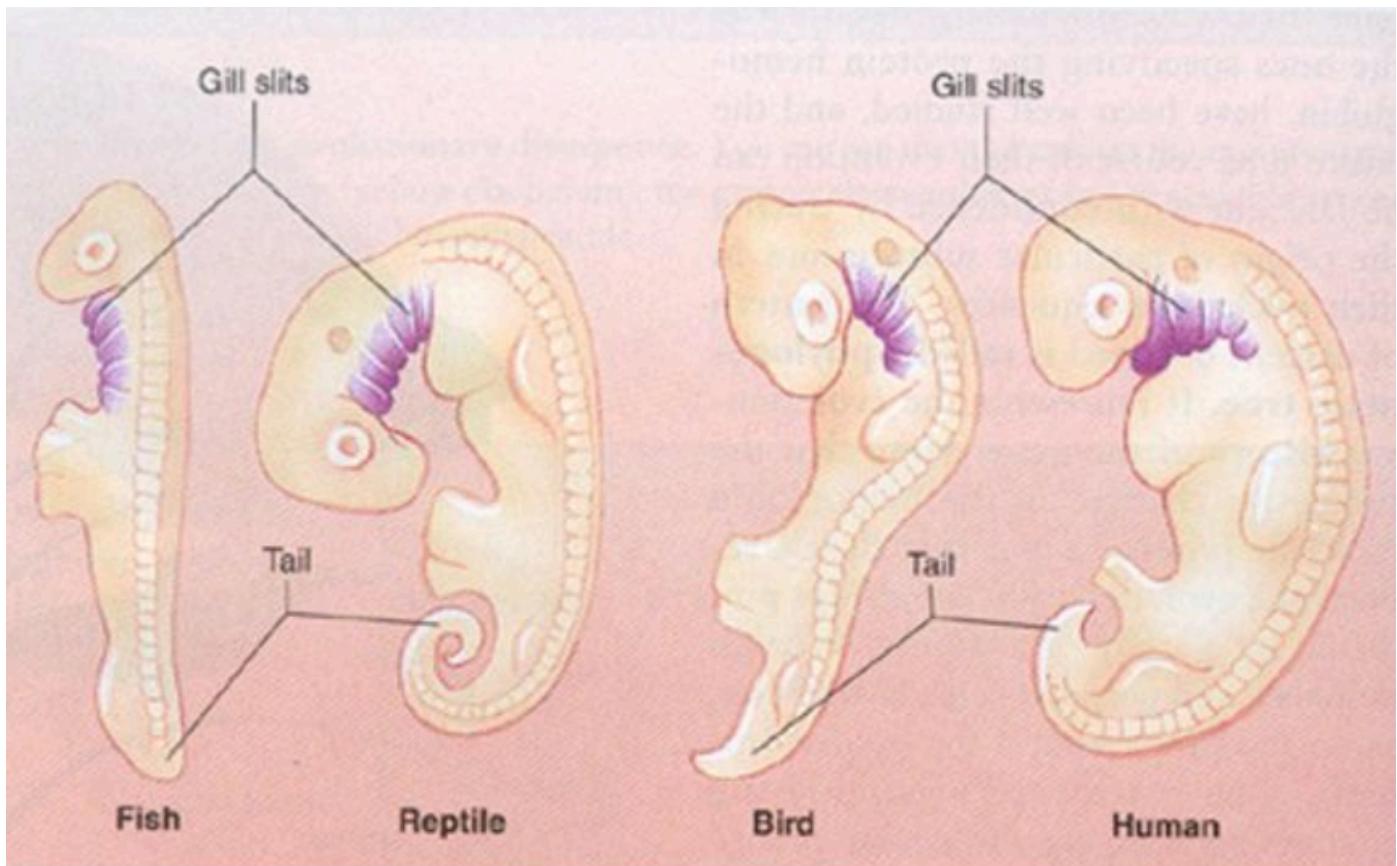
19

Multiple Choice 5 points



The pelvic bone of whales is not needed for movement within the water. This is an example of a(n) _____ structure.

- vestigial structure
- evolutionary structure
- homologous structure
- analogous structure



Vertebrate embryos start with gill slits and tails. What can this provide evidence for?

- They do not have a common ancestor.
- They all have a common ancestor that climbed trees.
- They all have a common ancestor that lived on the land.
- They all have a common ancestor that lived in water.