

Name _____ Period _____

Evolution/ Geologic Time Practice Questions & Review

Use the following words to complete questions 1-21

Mimicry	Fossils	Charles Darwin
Analogous Structures	Vestigial Structure	Embryology
Natural selection	Artificial selection	Gene Pool
Genetic Drift	Stabilizing Selection	Directional Selection
Disruptive Selection	Speciation	Camouflage
Reproductive Isolation	Divergent Evolution	
Geographic Isolation	Homologous Structure	
Convergent Evolution	Sexual Selection	

Read the Scenarios and write the correct term/s that represent the scenario

- 1- Suppose there was a small population of rabbits that got separated by a gully in the middle of a desert. This means the rabbits only bred within their small population. A couple of the rabbits had longer ears which allowed it to hear approaching danger better than other rabbits in the population. Over generations there is a high percentage that is at least 2-3 rabbits per litter will have long ears. The frequency of Long Ears is much higher in this particular isolated rabbit population than normal larger populations of rabbits. What evolution word explains this high frequency of long ears allele in this population?
- 2- Antelope live in the grassland of Africa. A population of these antelope was followed for several years. Cheetahs and lions are the antelope's natural predators. The antelope in the population with large legs are too strong for the cheetah's, but slow enough for the lions to catch. The antelope with small legs are too fast for the lions, but cheetah's can catch them easily. Having average sized legs is favored in this antelope population. What kind of selection does this represent?
- 3- A small population of 200 yellow beetles lived in a small pine forest. A logging company cut down a path of trees in the middle of the forest. This separated a small population of beetles from their original breeding population.
- 4- A species of blue, white, and blue-white speckled butterflies live in a meadow full of blue and white wildflowers. A biologist did a butterfly count in this meadow, and found 55 blue, 60 white, and 4 speckled butterflies. This butterfly population follows which kind of selection.
- 5- Fox hunting is a popular sport in many countries. Dogs are used to chase these wild K-9 foxes. Over the years people have bred dogs to have incredible olfactory (smelling) noses. The dogs continue to have better noses each generation.

- 6- A population of small fuzzy mammals lives in a rainforest in South America. The forest is extremely thick which makes walking tough. Most of the mammals sighted have small legs, which enables them to walk under most of the thick growth. However, there are a few individuals in this population with medium and tall legs. Over generations natural selection has favored these fuzzy mammals to have short legs.
- 7- Insects love to eat rose bushes, especially the tiny aphid insect. Lady bugs love to eat aphids, thus they live on rose bushes with the aphids. Most rose bushes have thorns. If you look close at the thorns you are liable to see some thorns moving. These “moving thorns” are really aphids resembling rose bush thorns.
- 8- Two sister species of Monkey Flower were known to interbreed freely for a long period of time. Over time one of the species of Monkey Flower started to release its pollen later and later in the year . Over time the Two species of Monkey Flower can no longer interbreed and produce offspring because they do not produce pollen at the same time of year.
- 9- All mammals have hair or fur as a characteristic. Many mammals use this fur to help regulate their body temperatures. We humans are classified as mammals, thus we have hair over the surface of our bodies. Some of this hair has no known purpose, yet we still have it and pass it on from generation to generation. What kind of structure does hair represent?
- 10- Cartilaginous fish called “Rays” live in the ocean. They flap their wing like structures much like a bird flaps its wings. The difference is that rays use water against their wings, and birds use air. The structure is different in these two organisms.
- 11- California King snakes are non-poisonous and have colored rings that make them look much like a Coral snake that is very deadly poisonous.
- 12- Archaeologists find many old life forms in rock. These ancient life forms look different then many of the present day life organisms. These strongly support the idea of change or say evolution. These ancient forms of life are known as what?
- 13- Birds, mammals, fish, and reptiles all look similar during the first few weeks of development. This similarity supports the idea that they may have come from a common ancestor. Comparing these developing animals is called what?
- 14- Whale fins contain the same bone structure as a human arm. These two structures are not used for the same function as a whale uses its fin to navigate through water and humans use theirs for other purposes.
- 15- Brussel sprouts, cauliflower, and broccoli are related to one another. In fact they have all come from one common ancestor. This idea that many organisms come from a common ancestor explains what kind of evolution?

- 16- Two species of fruit flies were separated by an ocean and after a long period of time they came back together and interbred. The offspring that they produced were now hybrids and were sterile. The two populations of fruit flies are now separated genetically.
- 17- This man studied many types of evolution in his lifetime and came up with the theory of Natural Selection.
- 18- Nature is considered to be cruel at times by some. Nature selects for the strongest individuals in a population to survive. Strength means being fit. Fitness in animals means having an adaptation that gives the animal an advantage over other animals in its population allowing the animal to reproduce and pass its genes on to its offspring. What word explains when nature selects which individuals survive and reproduce?
- 19- Genes are what makes an organism look and behave a specific way. Humans tend to have a global breeding population, while animals and plants tend to be restricted to smaller breeding populations. The genes in a given breeding population are said to be the populations _____?
- 20- When two different species look similar to one another but have no common ancestors or recent relation, it is said to be _____ evolution?
- 21- Male guppies tend to be colorful and female guppies tend to be drab. This would be because the females choose the mate in the population and they choose the most fit mate by how colorful they are and how long their tale is.

ANSWER THE FOLLOWING BY SIMPLE ANSWERS

- 22- Miners were digging a hole for a 1500 foot mine, and found several fossils while digging the hole. They found several bone-like fossils. They found a Woolly Mammoth tooth at about 800 feet down. They found a dinosaur femur bone at about 1200 feet, an ancient fern at 1400 feet, and a reptilian skeleton at 1300 feet. In addition they found a bird skull at 950 feet, a large mammal rib at 300 feet and a mystery bone at 100 feet. There was also a large petrified tree located at 275 feet. Using your knowledge of relative dating and the principle of superposition, put the names of the fossils in the correct order going from oldest to youngest.
- 23- The miners in the above question also encountered a small mosquito, and a moth in amber tree sap of an old tree. It was found in a fossil near the surface, thus they figured it was not older than 500,000 years old. They decided to use absolute dating to find the exact age of the mosquito, and moth. They decided to use absolute dating to find the exact age of the mosquito, and moth. Knowing that the half life of carbon-14 is 5730 years, and that the mosquito had 3.125% of carbon-14 remaining, how old is the preserved mosquito? They also found a moth that had 2.5 grams of carbon-14 and 37.5 grams of the daughter element nitrogen-14. How old is the moth?

	Natural Selection	Selective Breeding	Sexual Selection
Example			
What type of alleles (traits) are selected for			

Type of evidence	Fossils	Transitional Fossils	Homologous Structure	Vestigial Structure	Embryology	Absolute Dating	DNA Genetic Similarity
Definition of what it is							
How is it evidence							

Evolutionary thinker	What they Thought	Evidence that supported them
Charles Darwin		
Jean Lamarck		