**Rates of Evolution**

## I.) **Two Different Theories about the Rate of Evolution**

A. Gradualism -



**B.** Punctuated Equilibrium -

II.) **Three Types of Natural Selection**

1. Directional Selection -

ii'.'..

## Stabilizing Selection –

##  http://img.sparknotes.com/figures/A/a3aa6bb95c7d70781cc0089d17f9160f/stable.gif

1. Disruptive Selection -



III.) What allows or does NOT allow speciation to occur?

Speciation -

A. Geographic Isolation -

 Through mutation, natural selection, and genetic recombination each group evolves a new gene pool.

Examples:

1.

2.

# 3.

# 4.

 Describe an example of how geographic isolation can cause speciation.



Reproductive Isolation –

 1.

2.

3.

4.

 \*Therefore, geographic isolation can lead to reproductive isolation. Other factors related to evolution:

1. Convergent Evolution -
2. Divergent Evolution -

C. Adaptive Radiation -

D. Coevolution -

 What do you think are some examp1es of coevolution?

**Questions**

1. A species of brown ant lives in the grass and brush of the African rainforest. Habitat and food becomes scarce. Use a term and describe what you think will happen?
2. A certain species of bird lives on top of a rhino. The bird eats insects off the rhino keeping the rhino from

becoming ridden with insect bites. l\1ost likely these two species have?

 *3.* There is a species of marsupial with the common name "Tasmanian *wolf.”* Many believe this marsupial

 resembles a wolf. What is this an example of?

 4. A rate of evolution, in which organisms skip intermediates because the rate of evolution is fast, is called

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_?

 5. Using the three examples of natural selection draw which one you think would represent a change in a

population of rabbits that range from white to black, to a population in which white and black are

eliminated.

* + In general, organisms have variation, which allows for some individuals to be better adapted to their environment. Those organisms that are better adapted will survive and reproduce

And pass on those genes\_ to their offspring. After many, many, many generations evolution occurs,

* If the environment changes, there is a better chance of survival for that species if there is more

The best adapted individual may become the least adapted individual in a different environment.

 **Review**

1. List 5 conditions that can disrupt genetic equilibrium and cause evolution to occur.
2. Explain the role of mutations in evolution.
3. Contrast stabilizing, disruptive and directional selection.
4. Contrast the model of punctuated and the model of gradualism evolution.