

Name:

Institution:

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Date:

Biology (and other Life Sciences)

- 1. Compare and contrast directional selection and disruptive selection, and provide an example of each.**

Directional selection takes place only when one of the extreme traits of a population is eradicated resulting to a shift in the allele frequency. For example, the beak length of the birds from Fringillidae is transformed for the bird to feed on the available food sources. Large beaks finches endured the situation as they could crack seed to get food. The birds with conical beak were favored by the increase of insects by the directional selection. Disruptive selection occurs when the normal phenotype is selected against favoring both extremes of the population. For instance, in inhabitants of red, brown, and white chicken if the red chicken perishes the brown and white chicken become concentrated

- 2. Many pathogenic bacteria species are becoming resistant to antibiotics. Explain how such adaptations can develop through the process of natural selection. (Hint: Relate this example to the conditions that are necessary for natural selection to occur.)**

Due to a natural selection process, the bacteria advance to become more resistant to an antibiotic. The antibiotic is meant to kill the bacteria. In case the cells of the bacteria develop resistance as a result of plasmid, antibiotic will not affect them. The bacterial spread the resistance to their offspring hence leading to a resistant group.

- 3. What are the major evolutionary trends that developed among the major vertebrate groups, specifically those that allowed the transition from aquatic to terrestrial life?**

Tooth lessening, advancement of appendages and the capability of breathing are the main evolutionary developments that have happened among the vertebrates. Reduction of tooth enhanced the shifting from water to land-dwelling life.

- 4. Providing examples, explain how sexual reproduction in plants has evolved to become less dependent on water.**

Reproduction in some vascular and all non-vascular plants takes place when the semen sway through the exterior surroundings. The swimming process needs a water film, and ovum is very close to the ground to allow the sperm to swim to it. The sperm is contained in the pollen grain produced by also plays Gymnosperms and angiosperms make pollen. Other agents of pollination such as wind and animals have played a great role.