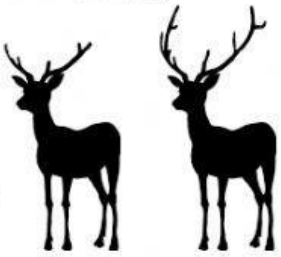
Name: _____ Date: _____ Period: _____

Homework: Important Adaptations

Answer the following questions about natural selection and adaptations.



1. The diagram to the right shows two elk from the same species. A mutation created a new allele that is results in longer antlers. The frequency of this allele will increase in the population if it allows the elk to do which of the following?

A be more visible to humans
B knock down more dead limbs
C attract more predators
D reproduce more offspring

2. Natural selection increases the frequency of beneficial alleles in –

A the cells of a tissue
B the population of a species
C the organs within an organism
D the abiotic factors of an ecosystem

3. A population of ants becomes divided into smaller populations. One population lives in a grassland, and the other population occupies a nearby urban environment. After several years, one of the populations is found to be mostly green while the other population is found to be mostly grey. The diversity that appeared within this species most likely the results from –

A ecological succession causing a change in the plant community
B ants in the urban environment being exposed to more pollution
C the color preference of each ant population's queen
D natural selection favoring different alleles in each environment

4. The variations between each of the ant populations described in question 3 continued to increase until the populations would no longer interbreed. This process is described as –

A succession **B** metamorphosis **C** speciation **D** biomagnification

5. A scientist observes two different populations of salamanders in different ecosystems. One of the populations has an average length of 11 cm while the other population has an average length of 19 cm. The first population is most likely shorter because –

A pollution stunted the growth of the first salamander population
B being smaller in that environment was advantageous for survival
C the second population had less diversity which allowed for more growth
D natural selection always favors organisms which are smaller

6. What process *creates* variations within the organisms of a species?

A gene splicing **B** sexual selection **C** mutation **D** natural selection

7. In order for natural selection to occur within a population, the population must contain –

A few members **B** inherited variations **C** eukaryotes **D** asexual organisms

LIVEWORKSHEETS

Epipedobates bilinguis (Toxic)



Allobates zaparo (Harmless)

Photos by David Cannatella

9. The back of each frog shown above is covered with red spots. Each species also has yellow markings at the base of its arms and legs. These two species are often difficult to distinguish from one another, but the frog on the left (*Epipedobates bilinguis*) is very poisonous while the frog on the right (*Allobates zaparo*) is harmless. What benefit does *Allobates zaparo* by looking so similar to a poisonous species?

A It is easier for *Allobates zaparo* to find edible insects when disguised as another species.
B It reduces predation on the *Allobates zaparo* population by deterring predators.
C It makes it easier for the members of these two species to interbreed with each other.
D It causes predators of the harmless species to being consuming *Epipedobates bilinguis*.

10. What adaptation would be important for a plant species living on the rainforest floor in an area where sunlight was very limited?

A bright flowers **B** thick stems **C** broad leaves **D** deep roots

11. The Leaf Insect (*Phyllium bioculatum*) shown to the right has most likely adapted its appearance in a way that allows it to do which of the following?



A avoid predation
B hide from producers
C fight parasites
D compete with flies

12. A rhinoceros eats plants, but it still benefits from having a large horn. The benefits associated with this horn are similar to the benefits associated with –

A the wings on a mosquito
B the roots of a cactus
C the talons on an eagle
D the poison on a dart frog

13. Which seed type will most likely be carried by the wind?

A 

B 

C 

D 

14. Rose bushes are most commonly known for their beautiful flowers, but rose bushes also cover their stems with sharp thorns. These sharp thorns most likely provide this plant with –

A defense **B** offspring **C** nutrition **D** sunlight

15. The frequency of an allele will increase in a population if it allows organisms to be more adapted to their environment. Adaptations are characteristics that allow organisms to -

A translate DNA into proteins
B survive and reproduce
C be more like humans
D become their own species

LIVEWORKSHEETS