DNA, Pedigrees, and Ecology Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

March 22, 2017

1. Carbon flows cyclically through organisms and the environment. Which of the following descriptions of the carbon cycle is NOT correct?

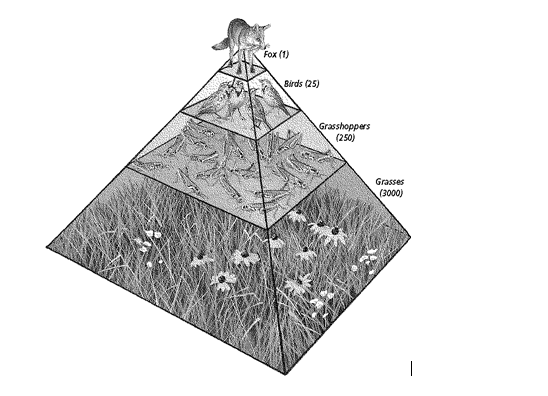
**A** Major reservoirs of carbon include tropical forests, oceans and fossil fuels.

**B** Carbon is produced through photosynthesis and used in cellular respiration.

**C** Humans may disrupt the carbon cycle by burning fossil fuels which may result in global warming.

**D** Carbon is released to the atmosphere in the form of CO2 through respiration in living things.

**Use the diagram for the question 2-4.**



1. What is the best explanation of why the numbers of organisms at each trophic level decrease from the bottom of the pyramid to the top?

**A** The organisms increase in size as you move up the pyramid.

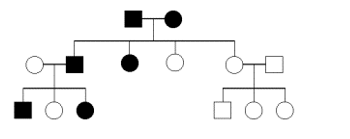
**B** Energy is used for life processes and lost as heat at each trophic level.

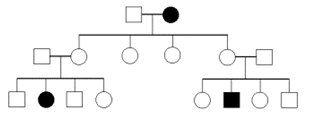
**C** Energy is wasted and destroyed at each trophic level.

**D** There is more sunlight available to the first trophic level

1. Which trophic level would grasshoppers be classified?
2. Primary Producers
3. Primary Carnivores
4. Primary Consumers
5. Secondary Consumers
6. If grasshoppers migrated to another location, what do you think is the most likely consequence to this trophic cascade?
7. The bird population would increase
8. The fox population would start feeding on grasses due to a new niche being created due to the void of grasshoppers
9. The grasses and cone head flowers population would increase
10. The bird population would start feeding on grass due to a new niche being created by the void of grasshoppers
11. DNA would best be classified as a
12. Carbohydrate C. Protein
13. Lipid D. Nucleic Acid

Look at the pedigrees below and predict the mode of inheritance for each.



1. Autosomal Dominant
2. Sex-linked Dominant
3. Autosomal Recessive
4. Sex-linked Recessive
5. 
6. Autosomal Dominant
7. Sex-linked Dominant
8. Autosomal Recessive
9. Sex-linked Recessive
10. A segment of DNA strand has the following bases:

**TAC GAT CAT ATA**

What is the complementary strand of DNA?

1. UAG CAU GAU AUA
2. TAG CAT GAT ATA
3. ATG CTA GTA TAT
4. AUG CUA GUA UAU
5. Which of the following bases below would **NOT** be found in DNA
6. Adenine C. Uracil
7. Guanine D. Thymine