Name _________________________________________

Migration in the Balance
Student assessment

1. Imagine you’re a mountain lion, one of the top carnivores in your ecosystem. Now imagine that all the plants in your ecosystem suddenly die. One year later, would you be able to survive in that ecosystem? Why or why not?

Ecosystems are made up of abiotic factors and organisms.

2. Which of the following is an abiotic factor of an ecosystem?
   a. Tree
   b. Water
   c. Mouse
   d. Dragonfly

3. Abiotic factors play important roles in most ecosystems, including ________________.
   a. Food for herbivores
   b. Food for carnivores
   c. Helping plants produce their own food
   d. None of the above

4. Which item in this picture is the primary source of energy on Earth?
   a. Water
   b. Tree
   c. Sun
   d. None of the above
5. Which of the following is an example of a producer?
   a. Monarch butterfly  
   b. Chicken  
   c. Horseshoe crab  
   d. Milkweed plant

6. An animal that eats plants AND other animals is called:
   a. An herbivore  
   b. An omnivore  
   c. A consumivore  
   d. A carnivore

7. Some animals migrate – they spend part of the year in one area and the other part of the year in a different area. Sometimes the journey between those two places is long, exhausting and dangerous. Give one reason why migration helps these animals survive.

8. Which TWO of the following describe ways that Monarch butterflies depend on plants?
   a. The caterpillars eat milkweed leaves  
   b. The caterpillars build their homes out of dead leaves  
   c. The adult butterflies eat milkweed seeds  
   d. The adult butterflies drink nectar from flowers

9. Food chains and food webs can be affected by ________________.
   a. Climate  
   b. Landscape  
   c. Water quality  
   d. All of the above

10. When a coyote eats a mouse, ________________ is transferred from the mouse to the coyote.
    a. Knowledge  
    b. Carbon dioxide  
    c. Energy  
    d. A burrito
11. Connect these seven items with arrows to show the flow of energy through a food web. Make all possible connections.

12. Now imagine removing the mouse from your food web model, and predict the effect it has on the remaining organisms. Explain your thinking about the change or lack of change in your food web.

13. Pesticides are chemicals that are used to kill insects, and they are often sprayed around ponds, ditches and wetlands where insects breed. Scientists have found these pesticides in the bodies of carnivores like the Osprey, also known as the fish hawk because of this bird’s main food source. We also know that Osprey don’t go around eating pesticides straight off the ground or out of the water. Explain how the pesticides get into the Osprey’s bodies.
14. Which is NOT an example of a naturally occurring change to the environment?
   a. Eruption of a volcano
   b. Disease outbreak
   c. Applying chemicals to lawn and crops
   d. Forest fire caused by lightning

15. Most of the energy humans use to run our cars and heat and cool our homes, comes from burning fossil fuels such as gasoline, oil and coal. When we burn fossil fuels, carbon dioxide (CO₂) and other greenhouse gases are released into the atmosphere. Why is carbon dioxide called a greenhouse gas?
   a. It is slightly greenish in color when it goes into the atmosphere
   b. It acts like a greenhouse, letting sunlight through and then trapping the heat
   c. All plants need it to survive and grow, and plants are mostly green
   d. It was made for the first time inside a greenhouse
   e. The person who invented it had always wanted a greenhouse when she was a kid

16. Which **TWO** of the following are possible consequences of rising air temperature due to global changes?
   a. The arctic ice sheet gets smaller every year and freezes for a shorter amount of time in the winters, causing polar bears to lose important seal hunting grounds.
   b. Monarch butterfly populations decline due to chemicals used to destroy milkweed, their main food source when they are caterpillars.
   c. Humans overharvest horseshoe crabs to use for fishing bait, resulting in less horseshoe crab eggs for Red Knots (a bird) to feed on during migration.
   d. Sea levels rise, resulting in flooding of marshland needed by migratory birds for feeding and resting during their migration.