REVIEW: ECOLOGY

1. Which type of organism can obtain energy directly from any of the other organisms in an ecosystem?
   (1) herbivore  (3) producer  (4) carnivore
   (2) decomposer

2. Which statement best describes the flow of energy and the movement of chemical compounds in an ecosystem?
   (1) Energy flows into living organisms and remains there, while chemical compounds are transferred from organism to organism.
   (2) Chemical compounds flow in one direction in a food chain and energy is produced.
   (3) Energy is transferred from organism to organism in a food chain and chemical compounds are recycled.
   (4) Energy flows out of living organisms and is lost, while chemical compounds remain permanently inside organisms.

3. The carrying capacity for herbivores in a habitat is most directly affected by the availability of
   (1) heat energy released by carnivores
   (2) carbon dioxide in the atmosphere
   (3) photosynthetic organisms
   (4) decomposers in the soil

4. Which statement describes how one biotic factor of the forest uses one of the abiotic factors listed in the data table?
   (1) Trees absorb water as a raw material for photosynthesis.
   (2) Insects eat and digest the leaves of trees.
   (3) Erosion of sedimentary rock adds phosphorous to the soil.
   (4) Fungi release oxygen from the trees back into the air.

5. The diagram below represents a process that occurs in nature.

   ![Diagram]

   This diagram can be used to illustrate the
   (1) effects of reduced competition between different types of plant life
   (2) effect of human intervention on a stable ecosystem
   (3) ecological succession from bare rock to stable ecosystem
   (4) evolution of mosses to trees over 200 years

6. An energy pyramid is represented below.

   ![Energy Pyramid]

   The energy for use by organisms in level $A$ originally comes from
   (1) producers
   (2) the Sun
   (3) level $B$
   (4) level $D$

7. A food web is represented below.

   ![Food Web]

   A continuous decrease in the size of the rabbit population would most likely cause a decrease in which other population?
   (1) frog
   (2) cricket
   (3) grass
   (4) mountain lion

8. Competition between two species occurs when
   (1) mold grows on a tree that has fallen in the forest
   (2) chipmunks and squirrels eat sunflower seeds in a garden
   (3) a crow feeds on the remains of a rabbit killed on the road
   (4) a lion stalks, kills, and eats an antelope
9. The amounts of all the organisms present in four different aquariums are shown below. Which aquarium would be the most stable?

<table>
<thead>
<tr>
<th>Organism</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>aquatic plants</td>
<td>300 g</td>
</tr>
<tr>
<td>fish that eat plants</td>
<td>30 g</td>
</tr>
<tr>
<td>fish that eat fish</td>
<td>3 g</td>
</tr>
<tr>
<td>bacteria</td>
<td>.001 g</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Organism</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>aquatic plants</td>
<td>1 g</td>
</tr>
<tr>
<td>fish that eat plants</td>
<td>3 g</td>
</tr>
<tr>
<td>fish that eat fish</td>
<td>30 g</td>
</tr>
<tr>
<td>bacteria</td>
<td>300 g</td>
</tr>
</tbody>
</table>

10. The graph below shows changes in the populations of two species that interact only with each other over a period of time.

Which statement best describes these two species?
1. Species A is a producer and species B is its consumer.
2. Species A is a host and species B is its parasite.
3. Species A is a predator and species B is its prey.
4. Species A is a scavenger and species B is its decomposer.

11. Organisms that are able to manufacture organic nutrients from substances in the abiotic environment are classified as

1. heterotrophs
2. fungi
3. autotrophs

12. Which factor would have the greatest effect on the flow of energy into an ecosystem?

1. a large decrease in the amount of sunlight available
2. a large increase in the number of carnivores
3. a small increase in the number of decomposers
4. a small decrease in the amount of minerals available

13. What will most likely occur if two different plant species compete for the same requirements in an ecosystem?

1. They will usually develop different requirements.
2. One species may adapt to a different environment.
3. One species may be eliminated from that ecosystem.
4. They will alter the environment so that they can both survive in that ecosystem.

14. Some of the energy taken in by an organism is not available to other organisms in a food web. Energy that is not available to other organisms in a food web is energy that is

1. stored in the remains of a dead animal
2. lost to the environment as heat
3. stored in eggs produced during sexual reproduction
4. produced in muscle tissue during the growth of an organism

15. The relationship that exists when athlete’s foot fungus grows on a human is an example of

1. predator/predator
2. producer/consumer
3. parasite/host
4. decomposer/autotroph

16. Which graph represents a population that grew and is maintained at the carrying capacity of its ecosystem?