Photosynthesis 2 Star

Name: _____ **Date:** _____

1. Which statement illustrates a biotic resource interacting with an abiotic resource?

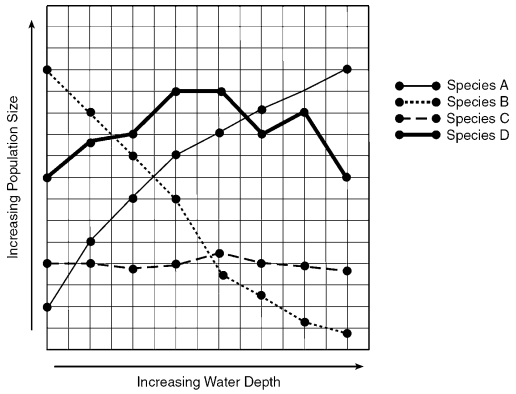
   A. A rock moves during an earthquake.

   B. A sea turtle transports a pilot fish to food.

   C. A plant absorbs sunlight, which is used for photosynthesis.

   D. A wind causes waves to form on a lake.

2. As the depth of the ocean increases, the amount of light that penetrates to that depth decreases. At about 200 meters, little, if any, light is present. The accompanying graph illustrates the population size of four different species at different water depths.

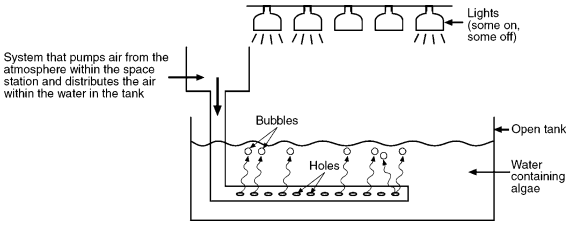


   Which species most likely performs photosynthesis?

   A. *A* B. *B* C. *C* D. *D*

3. Base your answer(s) to the following question(s) on the information and diagram and on your knowledge of biology.

   The diagram represents a system in a space station that includes a tank containing algae. An astronaut from a spaceship boards the space station.



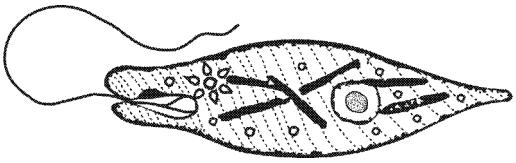
   State *two* changes in the chemical composition of the space station atmosphere as a result of the astronaut coming on board the space station.

4. Which process is directly used by autotrophs to store energy in glucose?

   A. diffusion B. photosynthesis

   C. respiration D. active transport

5. Base your answer(s) to the following question(s) on the information and the diagram below which represents a single-celled organism known as *Euglena*.



This organism is able to carry out both photosynthesis and cellular respiration. Choose *one* of these processes and write the name of the process you chose below.

Process: _____

Using words or chemical symbols, summarize the reaction involved in the process you chose.

6. Leaves of green plants contain openings known as stomates, which are opened and closed by specialized cells allowing for gas exchange between the leaf and the outside environment. Which phrase best represents the net flow of gases involved in photosynthesis into and out of the leaf through these openings on a sunny day?

A. carbon dioxide moves in; oxygen moves out

B. carbon dioxide and oxygen move in; ozone moves out

C. oxygen moves in; nitrogen moves out

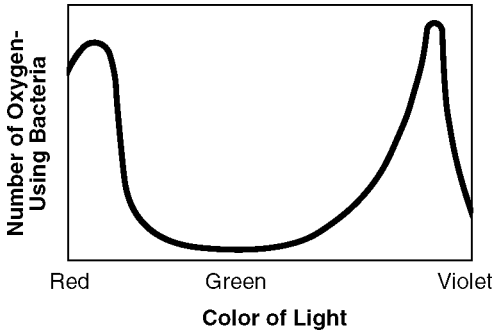
D. water and ozone move in; carbon dioxide moves out

7. Base your answer(s) to the following question(s) on the information below and on your knowledge of biology.

Carbon exists in a simple organic molecule in a leaf and in an inorganic molecule in the air humans exhale.

Identify the simple organic molecule formed in the leaf and the process that produces it.

8. The graph below shows the results of an experiment in which a container of oxygen-using bacteria and strands of a green alga were exposed to light of different colors.



Which statement best explains the results of this experiment?

A. The rate of photosynthesis is affected by variations in the light.

B. In all environments light is a vital resource.

C. The activities of bacteria and algae are not related.

D. Uneven numbers and types of species can upset ecosystem stability.

9. In one variety of corn, the kernels turn red when exposed to sunlight. In the absence of sunlight, the kernels remain yellow. Based on this information, it can be concluded that the color of these corn kernels is due to the

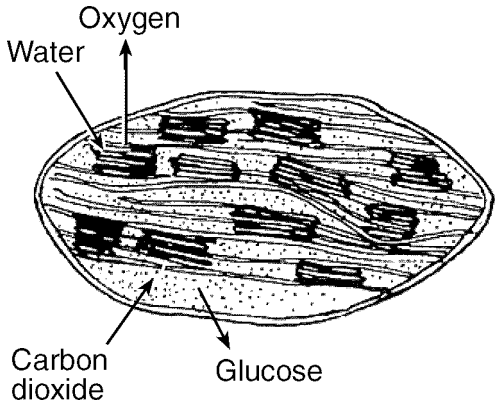
A. process of selective breeding

B. rate of photosynthesis

C. effect of environment on gene expression

D. composition of the soil

10. The diagram below illustrates the movement of materials involved in a process that is vital for the energy needs of organisms.



The process illustrated occurs within

A. chloroplasts

B. mitochondria

C. ribosomes

D. vacuoles

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1.
Answer: C

2.
Answer: B

3.
Answer: an increase in the level of water vapor OR an increase in the CO_2 level OR a decrease in the 0_2 level

4.
Answer: B

5.
Answer: Photosynthesis:

carbon dioxide + water → glucose + oxygen

Radiant energy is converted into chemical bond energy.

Cellular respiration:

glucose + oxygen → carbon dioxide + water + ATP

Energy is released from food.

6.
Answer: A

7.
Answer: glucose or sugar and photosynthesis

8.
Answer: A

9.
Answer: C

10.
Answer: A