Name: _____ Date: _____ Period: _____

Homework: Plant Systems Continued

Match the following forms of tropisms with the correct stimuli.

A = *Touch* **B = *Light*** **C = *Gravity*** **D = *Water***

1. Geotropism ____ 2. Hydrotropism ____ 3. Gravitropism ____

4. Phototropism ____ 5. Thigmotropism ____

Answer the following questions about plant systems.

1. Which plant tissue carries *water* up through the plant? _____
2. Which plant tissue distributes *sugars* in the plant? _____
3. What structure in the leaf allows *gases* to enter and exit? _____
4. What do we call the leaf's *waxy covering* that prevents water loss? _____
5. Which special cells controls the size of a *stoma*? _____
6. What *reproductive organs* are used by vascular plants? _____
7. Which of the two plant systems *absorbs water and nutrients*? _____
8. Which of the two plant systems includes everything *above ground*? _____

9. Which of the following molecules has the greatest effect on the growth of a plant in response to an environmental stimulus?

A carbon dioxide **B** auxin **C** chlorophyll **D** potassium nitrate

10. The diagram to the right shows how a plant grows in relation to gravity. Which of the following describes the growth patterns of its organ systems?



A The roots show positive geotropism; the shoots show positive geotropism
B The roots show negative geotropism; the shoots show negative geotropism
C The roots show positive geotropism; the shoots show negative geotropism
D The roots show negative geotropism; the shoots show positive geotropism

11. Redvines (*Brunnichia ovate*) have specialized stems called tendrils that grow around the branches of other plants. The tendrils allow redvines to wrap themselves around these plants for support. This pattern of growth is best described as –

A gravitropism **B** phototropism **C** thigmotropism **D** hydrotropism

12. Every cell in a plant requires water. Xylem tissue carries this water and composes most of the woody tissue found inside the tree. What must happen before water can be distributed through the xylem of a woody plant?

A The xylem must compete with the phloem for energy reserves
B Water vapor must be created by enzymes in the leaves of the plant
C Sugars stored in root vegetables are converted into water
D The water must be absorbed by the root system of the plant

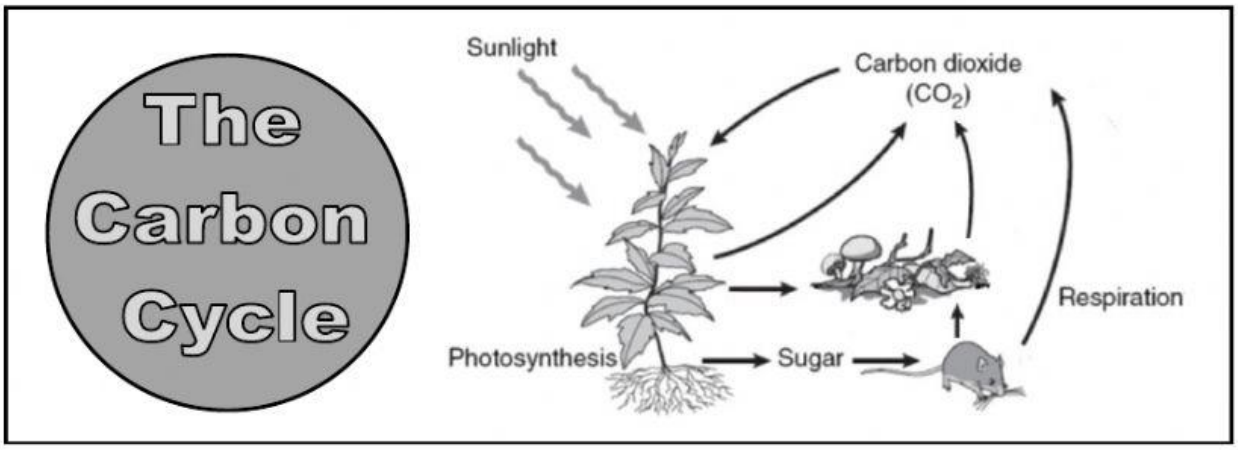
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13. To defend themselves from herbivorous insects, plants of the genus *Mimosa* quickly reduce the turgor pressure in their leaf cells causing them to droop. This response often causes the insect to fall from the plant before it can do significant damage to the plant. This defense mechanism is referred to as –

A natural selection
B a thigmonastic response
C a phototropic effect
D geographic isolation

14. Boron is a nutrient that plants need, but plants only need very small amounts of boron. One of boron's primary roles is to help maintain the integrity of plant cell walls, and boron is typically found in the soil in the form of boric acid (H_3BO_3). How is boron obtained by cells in the plant's shoot system?

A Boric acid is absorbed by the root system and distributed through the xylem
B Plants wait for boric acid to evaporate so that it can be absorbed through stomata
C Boric acid corrodes the stems of plants to reach cells in the inner tissues
D Bacteria in the soil to convert boric acid back into elemental boron



15. What service do decomposers provide to an ecosystem?

A the synthesis of new elements
B the production of food energy
C the recycling of nutrients
D the predation of animals

16. Which of the following changes in an ecosystem could reduce the amount of carbon dioxide (CO_2) in the atmosphere?

A burning large areas of vegetation
B planting trees to replace felled trees
C introducing more decomposers
D adding new species of animals

17. Carbon is removed from the air and converted into organic compounds. What type of organism is capable of completing this conversion?

A decomposers **B** consumers **C** producers **D** predators

18. Which of the following human activities would cause the greatest increase in the amount of carbon dioxide that was found in the atmosphere?

A Burning fossil fuels
B Breaking apart rocks
C Recycling paper products
D Planting taller grasses

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