

Biology

Module 15, Assignment #1



1. Read pages 463 – 475.
2. Write the word and the definition for each word.
 - a. Physiology
 - b. Nastic movement
 - c. Pore space
 - d. Loam
 - e. Cohesion
 - f. Translocation
 - g. Hormones
 - h. Phototropism
 - i. Gravitropism
 - j. Thigmotropism
3. List the four ways plants use water. Which of these processes uses the most water?
4. What happens to a plant when its turgor pressure is low?
5. What is the difference between nastic movement and a tropism? List an example of a nastic movement. List an example of a tropism.

Watch each of the videos listed below at the sites listed below. Describe the movement of the plants in each video.

<http://plantsinmotion.bio.indiana.edu/plantmotion/movements/tropism/tropisms.html>

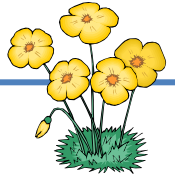
- a. Cool corn phototropism
- b. Coleus shoot gravitropism

<https://plantsinmotion.bio.indiana.edu/plantmotion/movements/nastic/nastic.html>

- c. Venus fly trap
 - d. Sensitive plant
6. What is hydrolysis?
 7. When do plants use hydrolysis?
 8. Water will travel faster through which soil sample? Sample A is made up of 40% gravel, 50% sand, and 10% organic material. Sample B is made up of 40% gravel, 50% silt, and 10% clay.
 9. Explain what causes water to move from a plant's roots up to its leaves.
 10. Which cells are alive: xylem or phloem?
 11. Two water samples were taken from a plant. Sample #1 contains glucose and water. Sample #2 contains dissolved minerals and water. Which was taken from the xylem and which is from the phloem?
 12. Explain what each of the following plant hormones does:
 - a. Auxins
 - b. Gibberellins
 - c. Cytokinins
 - d. Abscisic acid
 - e. Ethylene
 13. Do insectivorous plants do photosynthesis?
 14. What chemical do insectivorous plants get from the insects they trap?
 15. Is vegetative reproduction sexual or asexual?
 16. List five types of vegetative reproduction.
 17. What is grafting?

Biology

Module 15, Assignment #2



1. Read pages 476 – 490.
2. Write the word and the definition for each word.
 - a. Perfect flowers
 - b. Imperfect flowers
 - c. Pollination
 - d. Double fertilization
 - e. Seed
 - f. Fruit
3. Copy the diagram of a flower found on page 476 of your book and label all the parts.
4. In terms of genetics, what is the difference between vegetative reproduction and sexual reproduction in plants?
5. What is the male reproductive organ of the flower? What is the female reproductive organ?
6. What is the function of the petals of the flower?
7. List three ways pollen is transferred to the carpel of the flower.
8. How many cells are inside a microspore? Are they haploid or diploid?
9. How many cells are inside an embryo sac? Are they haploid or diploid? What is unusual about the large, central cell?
10. When a pollen grain reaches the carpel, what does the tube nucleus do?
11. How many sperm cells make their way to the ovule?
12. How is a zygote formed in the embryo sac?
13. What does the large, double-nucleus cell in the embryo sac become after it is fertilized?
14. What does the zygote become? What does the endosperm become?
15. What is a cotyledon?
16. What is the purpose of fruit? How does this help the species of plant survive?
17. What triggers the growth process in the seed and causes it to begin development into a plant?
18. What part of the plant does each of these become: radicle, hypocotyl, epicotyl.
19. If you plant a seed too deep, the seedling may die before it reaches the surface of the soil. Why does the plant die?