Sample test questions for Botany Event

Multiple Choice questions:

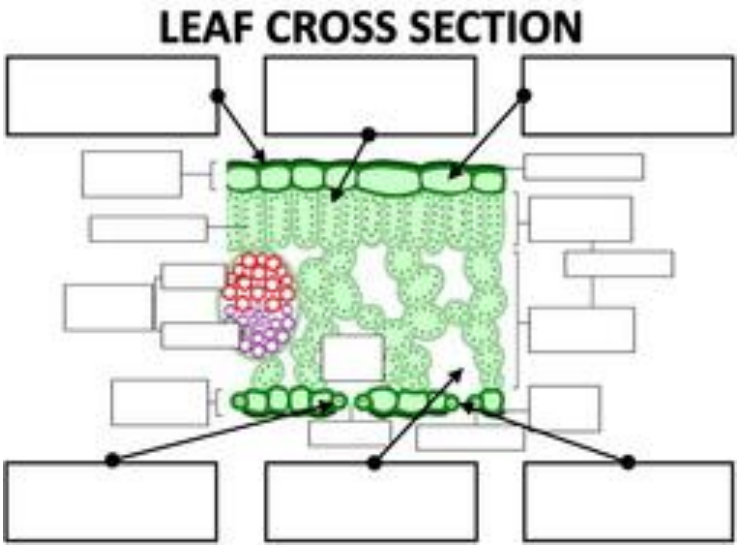
1. Which is not a function of the plant stem?
    a. Support the plants weight
    b. Carry nutrition to roots for storage
    c. Carry water and CO2 to the leaves for photosynthesis
    d. Provide protection for the internal structures of the plant
2. What botanical name is given to the male reproductive parts of a flower?
    a. Pistil
    b. Calyx
    c. Stamen
    d. Carpel
    e. None of these
3. Seeds are separated from the parent plant and enter new environments via:
    a. Disruption
    b. Dispersal
    c. Dislocation
    d. Diaspora
4. The function of the xylem is to:
    a. Store carbohydrates
    b. Transport water and minerals
    c. Excrete plant waste
    d. Develop into root nodules
5. Which of the following are NOT pollinators of flowers?
    a. Birds
    b. Bees
    c. Insects
    d. Lizards
    e. All are pollinators
6. Who is known as the 'father of botany'?
    a. Mendel
    b. Aristotle
    c. Linnaeus
    d. Munscher
7. Leaves are connected to their stem by a thin stalk called a:
    a. Leaf umbel
    b. Petiole
    c. Vein
    d. Stipe
8. Plant cell walls contain which of the following?
    a. Cellulose
    b. Hemicellulose
    c. pectin
    d. Lignin
    e. All the above
    f. A, B, And C
9. Plants take part in the:
    a. Water cycle
    b. Carbon cycle
    c. Nitrogen cycle
    d. Iron cycle
    e. All the above
10. The oxygen released in photosynthesis comes from:
    a. Water
    b. Carbon dioxide
    c. Both water and carbon dioxide
    d. From cellular respiration

Possible short answer questions, both B and C level:

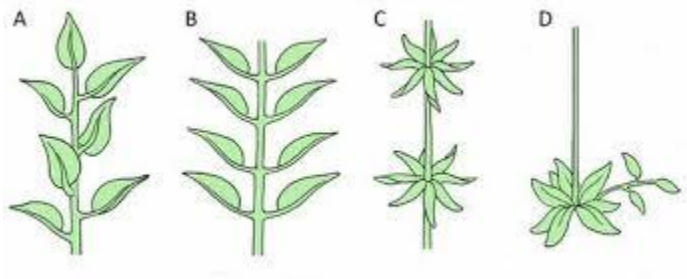
11. How does carbon dioxide get into the leaf for photosynthesis?
12. What allows a pea plant to utilize atmospheric nitrogen?
13. Give two differences between a MONOCOT and a DICOT plant.
14. Define 'transpiration pressure'.
15. Give one way that fungi and plants cooperate.
16. What survival advantage does the Euglenas motility confer?
17. What was the biggest advantage plants gained with the development of flowers?
18. What is chlorosis? How is it treated?
19. Give three specific adaptations plants use to defend themselves against predation.
20. Pick one epidemic plant disease and explain its etiology.
21. What is the origin of chloroplasts?

Possible identification diagrams:

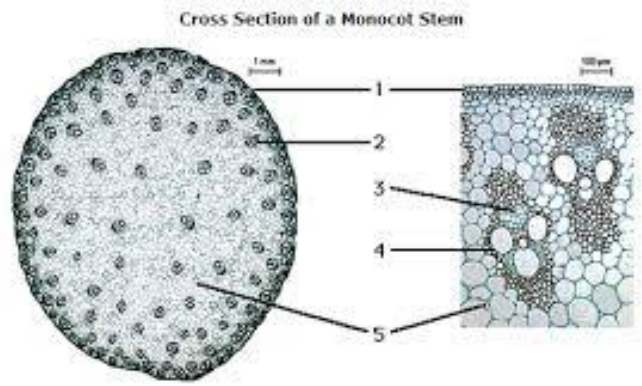
22. Label the structures of the leaf



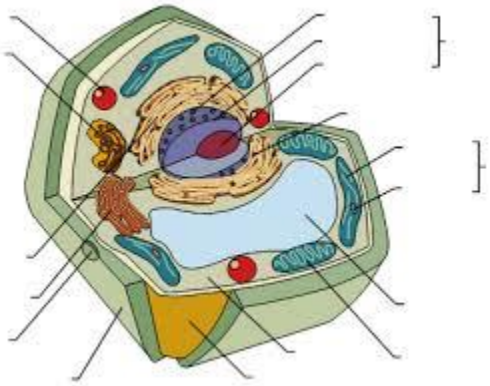
23. Identify the pattern of the leaves on these stems:



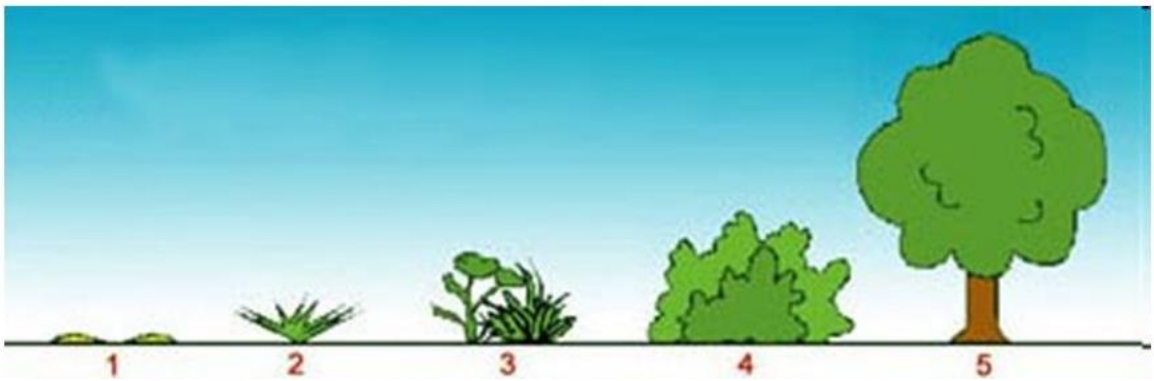
24. Label the parts of a stem;



25. Identify the parts of a plant cell



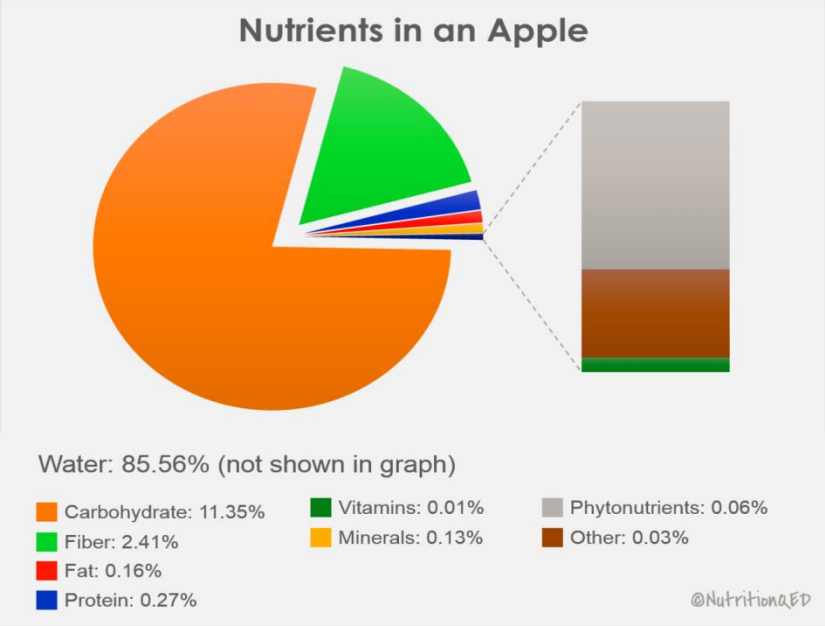
26. Identify the stages of plant succession:



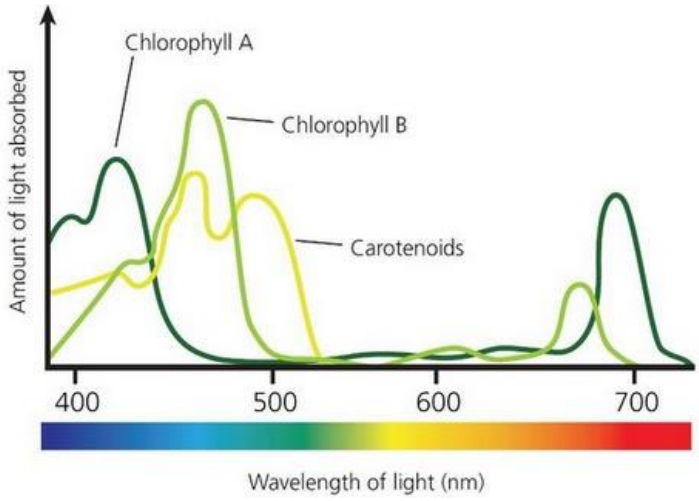
Examples of possible Lab stations for a stations test:

27. (Students are given a growing plant specimen with tags attached):
    a. Which label indicates an area containing xylem?
    b. In which area(s) of the plant is photosynthesis taking place?
    c. In which labeled areas of the plant will new growth start if the top is cut off?

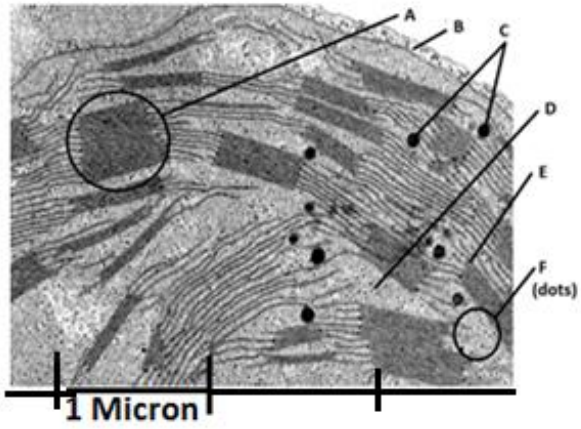
28. A small apple weighs 50 grams. Starch contains 5 calories per gram, and the pectin fiber in an apple is not digestible. View the chart below. About how many calories can be obtained from eating the apple?



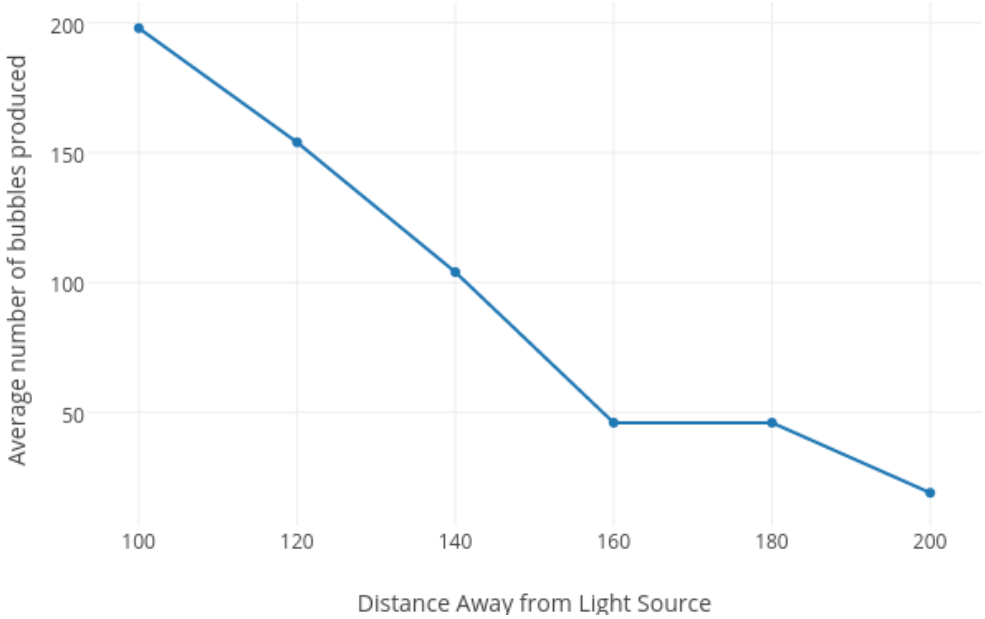
29. A Greenhouse grower wishes to maximize the growth of potted plants for sale. He can purchase two LED lights that emit defined wavelengths. What wavelength bulbs should he buy?



30. What is the common plant organelle pictured?
    a. What is the part labeled A?
    b. What are the structures labeled 'C'?
    c. What chemical process occurs in area 'D'?
    d. What are the small dots labeled 'F'?

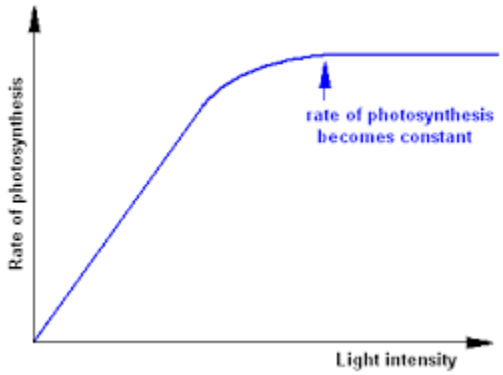


31. A student performs an experiment with algae in tubes, counting the bubbles produced when the tubes are at different distances from a light source. The data is below.



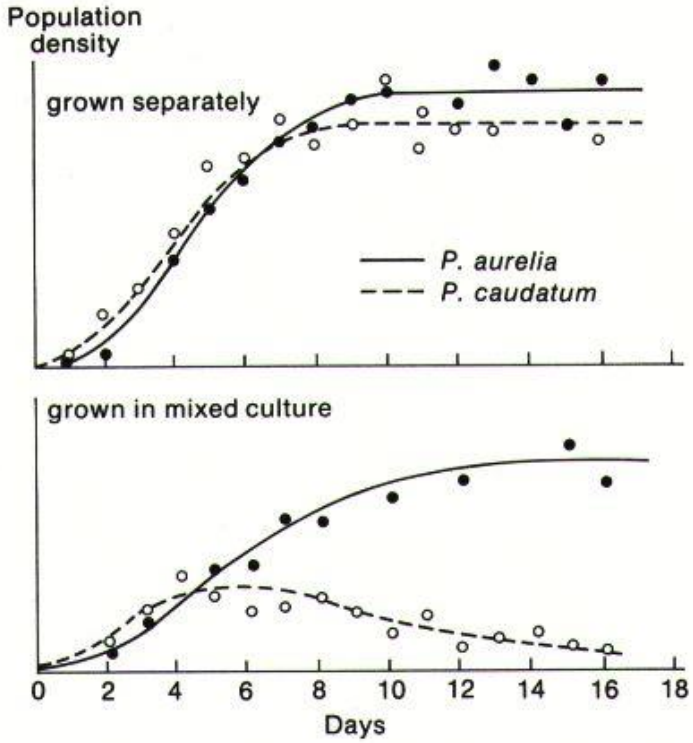
    a. What is the effect of light intensity on bubble formation?
    b. At what distance from the source is light generally inadequate?

32. The graph below shows light intensity and photosynthesis.



a. What factors control the rate of photosynthesis?
b. Why does the rate level off despite increases in light level?

33. Two different species of flowers were grown from seed in an experiment, seen below. In panel A the plants were seeded into individual pots and in panel B the plants were seeded together, several of each in every pot. Pots received equal amounts of water.



a. Why do both graphs show a leveling off of growth after 10 days?
b. What is the effect of growing the plants together in competition?
c. What are some possible reasons for the *p. Caudatum* curve in graph B? Give 3 reasons (exclusive of water) why the B curves might be different.