

Mr. Gunther

AP/IB Biology 2

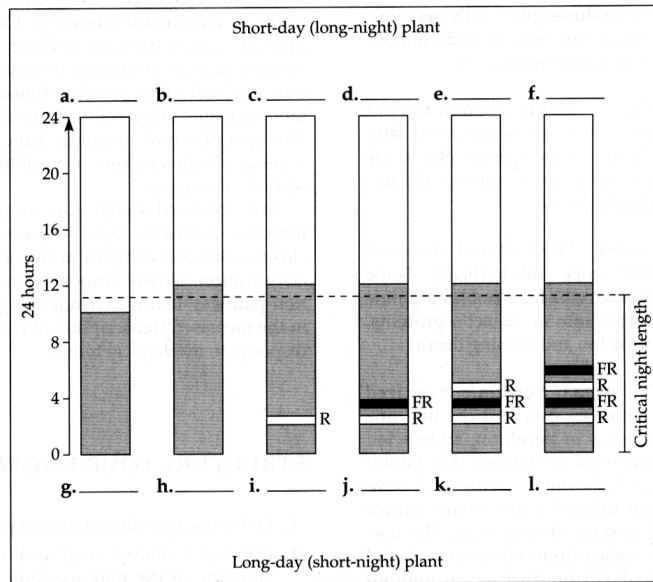
Chapter 39 Control Systems in Plants

IQ

1. In the process known as de-etiolation, what is the signal and the receptor?
2. Briefly describe some of the steps in the transduction of this signal.
3. What is the plant's response?
4. What are hormones?
5. Define tropism.
6. Define phototropism and give an example.
7. How was it discovered?
8. Fill in the table for the following hormones:

	Function	Location
Ethylene		
Cytokinins		
Abscisic acid		
Auxin		
brassinosteroids		
gibberellins		

9. What is apoptosis?
10. What is Systems Biology?
11. What is photomorphogenesis?
12. What are the 2 major classes of light receptors?
13. What are the pigments associated with these receptors?
14. Name the type of tropisms that a stem may exhibit.
15. What growth mechanism produces the coiling of a tendril?
16. What are free-running periods? How are they determined?
17. Indicate whether a short-day plant (a-f) and a long day plant (g-l) would flower or not flower under the indicated light conditions.



18. A plant is exposed to a spell of very hot and dry weather. How might it survive this stress?
19. How might a plant adapt to an unusually cold and very wet fall?
20. What is systemic acquired resistance?

SYK

19. List some agricultural uses of plant hormones.
20. Explain the three steps in the signal-transduction pathway that link stimulus to response in plant cells.

TRUE or FALSE: Indicate T or F and then correct the false statements.

21. Abscisic acid is necessary for a seed to break dormancy.
22. Roots exhibit negative phototropism and positive gravitropism.
23. Gibberellins, synthesized in the root, counteract apical dominance.
24. Bolting occurs when ethylene stimulates the degradation of cell walls, decreases chlorophyll content, and causes fruit to drop.
25. The application of gibberellins or auxin may induce the development of seedless fruit.
26. Abscisic acid induces the synthesis of enzymes that hydrolyze polysaccharides in cell walls of the abscission layer.
27. Action potentials are electrical impulses that may be used as internal communication in plants.
28. Thigmotropism is involved in the rapid movements of *Mimosa* leaves.
29. A physiological response to day or night length is called a circadian rhythm.
30. Vernalization is the need for pretreatment with cold before flowering.