

Chapter 39: Plant Responses to Internal and External Signals

1. Define and provide an example for each of the following terms:
 - a. Phototropism
 - i. Positive tropism
 - ii. Negative tropism
 - b. Gravitropism
 - c. Thigmotropism
2. Describe the early experiments on phototropism. What conclusions were drawn from these experiments?

3. Fill in the chart below on plant hormones.

Plant Hormone	Where Produced or Found in Plant	Major Functions
Auxin		
Cytokinin		
Gibberellins		
Absciscic acid		
Ethylene		

4. How do plants detect and regulate their responses to light?
5. What is photoperiodism?
6. Describe the following terms and provide an example:
 - a. Short-day plants
 - b. Long-day plants
 - c. Day-neutral plants

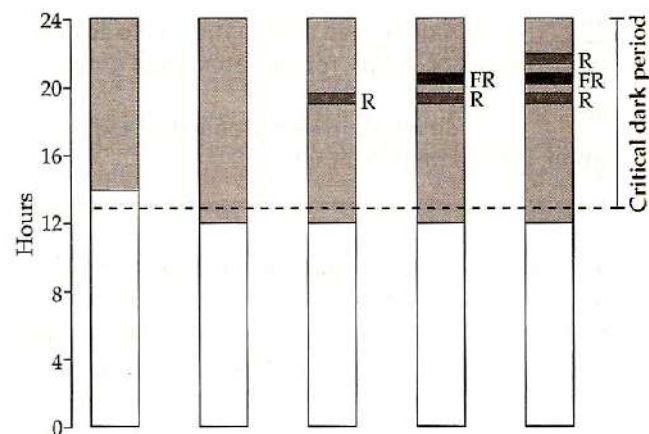
7. How might plants respond to the following environmental stresses?

- a. Drought
- b. Flooding
- c. Salt stress
- d. Heat stress
- e. Cold stress

8. How do plants defend itself against herbivores and pathogens?

INTERACTIVE QUESTION 39.6

Indicate whether a short-day plant (a–e) and a long-day plant (f–j) would flower or would not flower under the indicated light conditions.



a. _____ b. _____ c. _____ d. _____ e. _____

Short-day (long-night) plant

f. _____ g. _____ h. _____ i. _____ j. _____

Long-day (short-night) plant

How do these results demonstrate the red/far-red photoreversibility of phytochrome?