**Plant Diversity**
**Plant Development**

abscisic acid
agent orange
apical dominance
auxins: IAA (indole acetic acid), 2,4-D (dichlorophenoxy acid)
climacteric fruit
critical day length
cumulative growth (development)
cytokinins
development = cell division + growth + differentiation + morphogenesis
developmental plasticity
ethylene
gibberellic acids
herbicides: systemic (translocated) vs. nonsystemic (contact); selective vs. nonselective
hormone
indeterminant growth
long-day plant vs. short-day plant
meristems
messenger molecule
modular growth (development)
photoperiodism
plant growth regulator (substance)
receptor molecule
salicyclic acid
signal transduction
totipotency
tropism

Check yourself: you should be able to answer these questions.

1. What is development in an organism? What are the distinctive characteristics of plant development?

2. What are the properties of a hormone? Why have some plant physiologists proposed the term 'plant growth regulator' instead of plant hormone?

3. Distinguish the roles of receptor molecules and messenger molecules in signal transduction. How can a cell have several responses to the same growth regulator (hormone) or environmental stimulus?

4. Discuss the roles of the following plant hormones on plant development. In each case, note any practical applications (uses) of the hormone for humans.

a. auxin b. gibberellin c. ethylene

5. Distinguish the following:

a. selective vs. nonselective herbicides
b. systemic vs. nonsystemic herbicides

6. a. What is a tropism? What are examples of tropisms?
   b. Explain the developmental control of flowering in a short-day and long-day plant.

7. Is it possible for a short-day plant and long-day plant to both flower if kept in a growth chamber with a constant daily regime of 14 hours of artificial light and 10 hours of darkness? Explain.