Name Date Class

Chapter Test

# Plant Processes

Chapter 11

## I. Testing Concepts

**Directions:** *Match the description in the first column with the item in the second column by writing the correct letter in the space provided. Some items in the second column may not be used.*

_____ **1.** plant processes using light energy to produce food

_____ **2.** anything in environment affecting the behavior of an organism

_____ **3.** response of a plant to a stimulus

_____ **4.** flowering response of a plant to changes in length of light and dark in a day

_____ **5.** plants requiring long nights to flower

_____ **6.** plants that flower over a wide range of night lengths

_____ **7.** plant hormone that moves to shaded side of stem

_____ **8.** releasing energy from food

**a.** auxins
**b.** day-neutral plants
**c.** long-day plants
**d.** photoperiodism
**e.** photosynthesis
**f.** respiration
**g.** short-day plants
**h.** stimulus
**i.** gibberellins
**j.** tropism

**Directions:** *For each of the following, write the letter of the term or phrase that best completes the sentence.*

_____ **9.** Most carbon dioxide enters plants through stomata on the _____.
**a.** lower surface of leaves **c.** tips of the stems
**b.** root tips **d.** upper surface of leaves

_____ **10.** Light, _____, and carbon dioxide all affect the opening and closing of stomata.
**a.** gravity **b.** insects **c.** minerals **d.** water

_____ **11.** The plant hormone that causes stomata to close and that helps plants respond to water loss is _____.
**a.** cytokinin **b.** auxin **c.** gibberellin **d.** abscisic acid

_____ **12.** The autumn colors of tree leaves are due to _____ in the leaves.
**a.** auxins **b.** carbon dioxide **c.** pigments **d.** chlorophyll

_____ **13.** Light energy for the plant to use in making its food is trapped by _____.
**a.** carbon dioxide **b.** pigments **c.** chlorophyll **d.** water

_____ **14.** The type of growth response having to do with light is called _____.
**a.** gravitropism **b.** photoperiodism **c.** phototropism **d.** photosynthesis

_____ **15.** _____ causes fruit to ripen.
**a.** Auxin **b.** Ethylene gas **c.** Chlorophyll **d.** Gravity

_____ **16.** Plants that require short nights to flower are called _____ plants.
**a.** long-day **b.** short-day **c.** day-neutral **d.** periodic

Chapter Test (continued)

## II. Understanding Concepts

### Skill: Sequencing

**Directions:** *Place the following in the proper order to show the process of photosynthesis.*

$6O_2$ $6H_2O$ $6CO_2$ $C_6H_{12}O_6$ light energy

1. _____ + _____ + _____ →

2. _____ + _____

### Skill: Comparing and Contrasting

**Directions:** *Names and examples of two types of tropisms are listed in the table below. Complete the table by writing the stimulus of each type of tropism.*

| Type of tropism | Stimulus | Example |
|---|---|---|
| Gravitropism | **3.** | root growing downward |
| Phototropism | **4.** | plant growing toward Sun |

**Directions:** *Complete the table describing photoperiods of plants. First identify the type of photoperiodism described. In the last column, provide two examples of each type of photoperiodism.*

| Description | Type of photoperiodism | Plant examples |
|---|---|---|
| Plants that require long nights to flower | **5.** | **6.** |
| Plants that require short nights to flower | **7.** | **8.** |
| Plants that are not sensitive to length of night or day | **9.** | **10.** |

Assessment

## Chapter Test (continued)

**Directions:** *Complete the paragraph by filling in the blanks.*

Gas exchange is one way living cells obtain raw materials and get rid of waste products. Each stoma on a plant is surrounded by two **11.** _____ cells that control the size of the opening. When these cells absorb water, they swell and the stoma opens, letting **12.** _____ in and **13.** _____ out. In respiration, organisms break down food chemically to release **14.** _____. Respiration that uses oxygen to break down food chemically is called **15.** _____. This occurs in the **16.** _____ in cells. Oxygen is used to break down food to produce **17.** _____, water, and energy. This process is the direct opposite of the reaction that occurs in **18.** _____.

## III. Applying Concepts

**Directions:** *State two reasons photosynthesis is important.*

**1.** _____

_____

_____

**2.** _____

_____

_____

**Directions:** *Classify each of the following as describing* **photosynthesis**, *or* **respiration**.

**3.** Energy released: _____

**4.** Energy stored: _____

**5.** Light energy, $6H_2O$, and $6CO_2$ at start: _____

**6.** $C_6H_{12}O_6$ and $6O_2$ at start: _____

**7.** $C_6H_{12}O_6$ and $6O_2$ at end: _____

**8.** $6CO_2$, $6H_2O$, and energy at end: _____

**9.** Takes place in all cells: _____

**10.** Takes place in cells with chlorophyll: _____

## Chapter Test (continued)

**Directions:** *In the table below, classify the type of tropism described, identify the tropism as positive or negative, and identify the stimulus to which the plant is responding.*

| | Tropism | Positive or negative | Stimulus |
|---|---|---|---|
| **11.** A plant stem turns toward the Sun. | | | |
| **12.** A plant's roots grow into the soil. | | | |
| **13.** A stem breaks through the soil. | | | |

## IV. Writing Skills

**Directions:** *Answer the following questions on the lines provided.*

**1.** What is the relationship between plant hormones and tropisms? Give an example.

**2.** What are the two types of reactions that can take place during photosynthesis? Explain.