Name_____ Class_____ Date_____

Chapter 25 Plant Responses and Adaptations

Section 25–1 Hormones and Plant Growth (pages 633–638)

This section explains what plant hormones are. It also describes how hormones such as auxins, cytokinins, gibberellins, and ethylene affect plant growth.

Patterns of Plant Growth (page 633)

1. Is the following sentence true or false? Plant growth follows patterns that are the same for all species. _____

2. Circle the letter of each sentence that is true about plant growth.

a. Chemicals direct, control, and regulate plant growth.

b. Meristems are found at places where plants grow rapidly.

c. Plants stop growing when they reach maturity.

d. Even very old plants continue to grow.

Plant Hormones (page 634)

3. What is a hormone? _____

_____

_____

4. What are two ways in which plant hormones control plant growth?

a. _____

_____

b. _____

_____

5. What is a target cell? _____

_____

6. Circle the letter of each sentence that is true about hormones and plant growth.

a. Plant hormones are produced in growing flowers and fruits.

b. A single hormone may affect two different tissues in different ways.

c. Hormones can activate the transcription of certain genes.

d. All plant cells are affected by all plant hormones.

Auxins (pages 634–636)

7. What is phototropism? _____

_____

8. From their experiment with oak seedlings, what did the Darwins suspect about the seedlings? _____

_____

Name_____ Class_____ Date_____

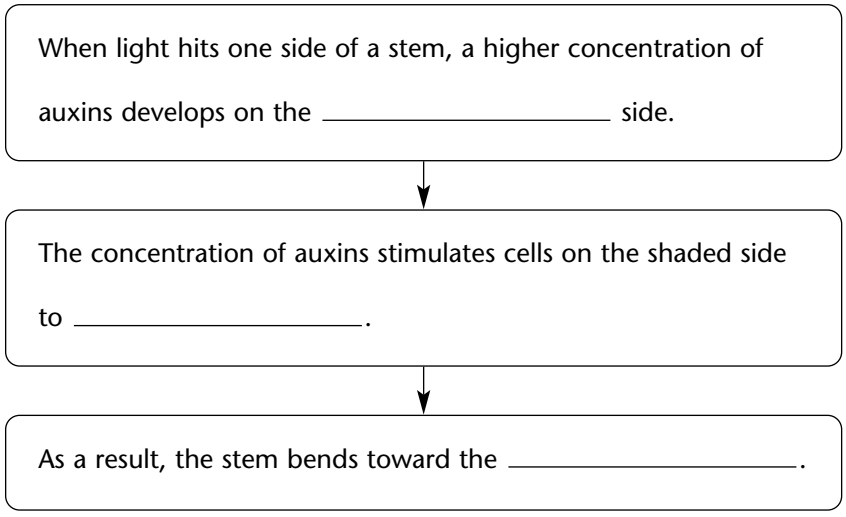
9. How do auxins affect plant cells? _____

10. Where are auxins produced, and how are they distributed in a plant? _____

_____

_____

11. Complete the flowchart about phototropism.



12. What is gravitropism? _____

_____

13. Circle the letter of each sentence that is true about auxins.

a. Auxins cause roots to grow downward.

b. Auxins regulate cell division in meristems.

c. Snipping off the tip of a plant removes the source of auxins.

d. In roots, auxins stimulate cell elongation.

14. What is a lateral bud? _____

_____

15. The closer a bud is to the stem's tip, the more it is inhibited. What is this phenomenon called? _____

16. What are herbicides? _____

_____

Cytokinins (page 636)

17. What are cytokinins? _____

_____

_____

Name _____ Class _____ Date _____

18. Circle the letter of each sentence that is true about cytokinins.

a. They delay the aging of leaves.

b. They stop cell division and the growth of lateral buds.

c. They often produce effects opposite to those of auxins.

d. They cause dormant seeds to sprout.

19. What are two examples of how cytokinins produce effects opposite those of auxins?

a. _____

_____

b. _____

_____

Gibberellins (page 637)

20. What are gibberellins? _____

_____

21. Particularly in stems and fruits, gibberellins produce dramatic increases in _____.

Ethylene (page 638)

22. What do fruit tissues do in response to auxins? _____

_____

_____

23. Ethylene is a plant hormone that causes fruits to _____.