Chapter 41 – Sensory Systems in Plants

1. What is the difference between **photomorphogenesis** and **phototropism**?

2. What is **phytochrome?** What are the two forms of phytochrome and how are they switched?

3. Explain how the amount of phytochrome is regulated.

4. Name 3 plant growth responses that phytochrome is involved in.

5. What is meant by **etiolation**?

6. Phytochrome is found in the cytoplasm of a plant cell. When can it move into the nucleus to help with transcription of light response genes?

7. Are all wavelengths of light equal when it comes to phototropism? Explain.

8. What is meant by a **circadian clock**?

9. What may be the cause of **root gravitropism**? Which hormone plays a key role?

10. Which cell organelle plays a critical role in gravitropism? _____

11. What is a **thigmotropism**? Describe the basic mechanism. Which plant hormones are involved? Provide an example.

12. What is the mechanism that causes *Mimosa* leaves to close?

13. Discuss several examples (short-term and long-term) of how a plant may respond to lack of water and extreme temperature changes.

14. What does **auxin** do in plant cells that causes elongation? Describe Went's experiment.

15. What are the major functions of the **cytokinins**?

16. Identify two functions of **gibberellins**.

17. What are the major functions of the **brassinosteroids**?

18. What are the major functions of the **oligosaccharins**?

19. Identify a few plant responses to **ethylene**.

20. Identify a few plant responses to **abscisic acid**.