
BIOLOGY

Study Guide: Chapter 22-25

Botany – The Study of Plants

Be able to define the following terms.

Annual	Gymnosperm	Root
Biennial	Monocotyledon	Sepal
Bryophyte	Nonvascular plant	Stamen
Chlorophyll	Perennial	Stem
Cuticle	Petal	Stomata
Dicotyledon	Phloem	Transpiration
Flower	Photosynthesis	Vascular plant
Germination	Pistil	Xylem

Chapter 22 – What is a Plant?

1. Give a simple description of a plant (use one word descriptions).
2. Describe when the first plants appear in the fossil record including what they are thought to have evolved from and what those first plants were like.
3. Describe how each of the following changed so that as plants made the move to land they would be able to survive out of the water:
 - a. Preventing water loss
 - b. leaves
 - c. roots
 - d. transport of materials
 - e. reproduction
4. Explain what Alternation of generations means – draw a diagram to illustrate it.
5. Why is it that non-vascular plants were never able to grow very tall?
6. Briefly describe each of the seven divisions of non-seed plants.
7. What is a seed? What makes them more effective in reproduction than a simple spore?

Chapter 23 – The Diversity of Plants

8. What are the nonvascular plants? What are some characteristics shared by all nonvascular plants?
 9. What are the seedless – vascular plants? Describe each of the three divisions.
 10. What is the difference between a gymnosperm and an angiosperm?
 11. Describe each of the four divisions of gymnosperms.
 12. What makes angiosperms different from other plants? What are the advantages of flowers and fruits?
 13. Describe the difference between:
 - a. annuals, Biennials, and perennials.
-

-
-
15. What is the difference between an evergreen and a deciduous plant? Describe the adaptive advantage of each.

Chapter 24 - Plant Structure and Function

16. Make a chart that shows the three types of plant cells including a column for structure and one for function.
17. Make a chart showing the structure and functions for each of the following types of plant tissues: epidermal tissue, vascular tissue (xylem and phloem), ground tissue, meristemic tissue
18. What are the functions of roots? Stems? Leaves?
19. How can you tell the difference between a monocot and a dicot?
20. What is a hormone? For each of the following plant hormones give their function: auxins, gibberellins, cytokinins, ethylene.
21. Describe each of the following types of tropisms: phototropisms, gravitropism, thigmotropism.

Chapter 25 - Reproduction in Plants

22. What is vegetative reproduction?
23. What is a flower? Describe each of the following organs of the flower: petals, sepals, stamen, anther
24. How might dormancy contribute to the survival of a plant species?
-