

Plant Anatomy

Matching - use the key below to answer questions 1 - 5

- I. Parenchyma cells
- II. Collenchyma cells
- III. Sclerenchyma cells
- IV. Xylem
- V. Phloem

1. These cells are living at functional maturity
A. I only B. II only C. I & II D. I, II, V E. I, II, IV, V
2. These cells have thick cell walls and function in supporting the plant
A. III only B. II & III C. III & IV D. II, III, IV E. I, II, III, IV
3. These cells are commonly referred to as the vascular tissue
A. IV only B. V only C. IV, V D. III, IV, V E. III, IV
4. These are the least differentiated and least specialized cell type(s)
A. I only B. II only C. I & II D. IV, V E. III, IV
5. Fibers and sclerids are examples of:
A. II only B. III only C. III, IV D. III, V E. III, IV, V
6. Which of the following statements (A-D) about secondary growth is FALSE? If statements A-D are true, then choose E.
A. The vascular cambium is responsible for secondary growth in dicots
B. Secondary growth is an increase in girth
C. There is more secondary growth in a woody dicot than in an herbaceous dicot
D. A plant that exhibits secondary growth cannot exhibit primary growth
E. All of the above statements about secondary growth are TRUE
7. All of the below are functions of the root system except:
A. Storage B. Anchoring the plant C. Photosynthesis
D. Water acquisition E. All of the above are functions of the roots
8. Which of the following characteristics would you NOT expect to find on a monocot?
A. Secondary growth B. Parallel veins on leaves C. Fibrous root system
D. Herbaceous habit E. All of the above characters are typical of monocots
9. Water entering the root traveling between the cell walls is said to be traveling through the:
A. Apoplast B. Phragmoplast C. Leucoplast
D. Symplast E. None of the above

10. The figure to the left is an example of a(n)
A. Monocot stem
B. Herbaceous dicot stem
C. Woody dicot stem
D. Monocot root
E. Dicot root

11. From where do branch roots originate?
A. The pericycle B. The apical meristem C. The vascular cambium
D. The xylem E. None of the above

12. Which of the following statements about the vascular cambium is TRUE?
A. the vascular cambium is responsible for production of branch roots
B. the vascular cambium is only found in dicots
C. the vascular cambium produces phloem to the inside and xylem to the outside
D. All of the above statements are FALSE

Use the key below to answer questions 13 - 16

- I. Bryophyte (moss) III. Gymnosperm (pine)
II. Pteridophyte (fern) IV. Angiosperm (flowering plant)

13. This/these plant groups have separate sporophytes and gametophytes:
A. I only B. II only C. III only D. I & II E. I, II, III
14. This/these plant groups have seeds:
A. III only B. IV only C. III & IV D. II, III, IV E. I, II, III, IV
15. This/these plant groups have vascular tissue
A. III only B. IV only C. III & IV D. II, III, IV E. I, II, III, IV
16. The sporophyte is the dominant stage in the life cycle of this/these plant groups
A. III only B. IV only C. III & IV D. II, III, IV E. I, II, III, IV
17. During which stages of the life cycle of an angiosperm is/are animals important?
A. During seed germination B. During pollination
C. During seed dispersal D. B & C
E. A, B, C
18. A fruit is a mature:
A. Ovule B. Ovary C. Stigma D. Ovulate cone E. None of the above
19. In a pine tree, what is the male gametophyte?
A. The ovulate cone B. The egg sac C. The male cone
D. The pollen E. None of the above

20. In a fern, the _____ generation produces the spores and the _____ generation produces the sperm and eggs
- A. sporophyte; gametophyte
 - B. sporophyte; sporophyte
 - C. gametophyte; sporophyte
 - D. gametophyte; gametophyte
21. In a moss, where does meiosis take place?
- A. In the sporangia
 - B. In the archegonia
 - C. In the antheridia
 - D. In the meiospore
 - E. None of the above
22. Which of the following is NOT an advantage to seed-based reproduction?
- A. A food stockpile is provided for the developing embryo
 - B. The seed has a seed coat which protects the embryo and allows the embryo to remain dormant until environmental conditions are right for germination
 - C. The amount of energy spent per female gametophyte is less than that spent on making a spore in ferns
 - D. The female gametophyte remains on the sporophyte, affording it protection and nourishment
 - E. ALL of the above are advantages for seed-based reproduction
23. Which of the following statements about Angiosperms is FALSE?
- A. Angiosperms have coevolved with animals to facilitate pollination
 - B. Angiosperms have coevolved with mammals to facilitate seed dispersal
 - C. Flowers are a characteristic unique to angiosperms
 - D. Double fertilization ensures that food for the embryo will be present long before fertilization of the egg occurs
 - E. All of the above statement are TRUE
24. If you went outside and saw an oak tree, I would be looking at:
- A. a haploid gametophyte
 - B. a diploid gametophyte
 - C. a haploid sporophyte
 - D. a diploid sporophyte
25. A seed is a mature:
- A. Female gametophyte
 - B. Ovary
 - C. Ovule
 - D. Ovulate cone
 - E. None of the above

Answers:

1 D	6 D	11 A	16 D	21 A
2 D	7 C	12 B	17 D	22 C
3 C	8 A	13 D	18 B	23 D
4 A	9 A	14 C	19 D	24 D
5 B	10	15 D	20 A	25 C