

Midterm

Course: BI266, Life on Earth: Plants

Session: Winter 2012; date: Nov 1st

Professor: Mihai Costea

Length of examination: 40 minutes.

Only one answer is correct in the multiple choice questions

Examination aids allowed: None

Name:

I.D. #:

[Each question is 1 mark; TOTAL = 20 marks]

1. An annual plant...

- a. is a plant with annual leaves.
- b. lives for several years; it flowers and produces fruits/seeds every year.
- c. lives for several years; it flowers and produces fruits/seeds only once in life, after which it dies.
- d. lives for one growing season; it flowers and produces seeds in the same year, after which it dies.**
- e. is a plant with one annual xylem growth ring.

2. Which of the following meristems develops first?

- a. Procambium
- b. Primordial**
- c. Primocambium
- d. Protocambium
- e. Protoderm

3. Sclerenchyma does not exist in:

- a. The roots of some plants
- b. The stems of some plants
- c. The leaves of some plants
- d. The meristems of some plants**
- e. The pear fruit

4. Vascular cambium is a meristem that produces:

- a. Cambium
- b. Cork cambium
- c. Secondary vascular elements (secondary xylem and phloem)**
- d. Primary vascular elements (primary xylem and phloem)
- e. Procambium

5. Perforation plates are characteristic to:

- a. Sieve tubes
- b. Tracheids
- c. Perforated resin ducts
- d. Vessel members**
- e. Laticifers

6. Extrafloral nectaries are:

- a. Nectaries that produce nectine in the flower of some plants
- b. Nectaries that are not associated with the flower**
- c. Nectaries that produce latex in other organs than the flower
- d. Additional nectaries in the flowers of some plants (in addition to the 'regular' nectaries)
- e. Additional nectaries in the fruit of some plants (in addition to the 'regular' nectaries)

7. One of the tissues below is not made up of elongated cells; which one?

- a. Phloem
- b. Xylem
- c. Sclerenchyma consisting of sclereids**
- d. Sclerenchyma consisting of fibers
- e. Laticifers

8. Adventitious roots develop from:

- a. From the apical meristem of the radicle (the root embryo)
- b. From stems, leaves, etc. (but not from the radicle)**
- c. From seeds during the germination
- d. There is no such thing called "adventitious roots."
- e. From the adventiferous meristem

9. One of the following functions of the root cap is bogus (false):

- a. Produce the apical meristem of the root
- b. Protect the apical meristem of the root
- c. Lubricate the root tip to facilitate the penetration of root in the soil
- d. Gravity perception
- e. Produce a slimy substance that acts as a growth medium for beneficial bacteria and fungi

10. One of the following meristems is not present in both the root and stem of a 'dicot'; which one?

- a. Protoderm
- b. Procambium
- c. Ground meristem
- d. Intercalary meristems
- e. Vascular cambium

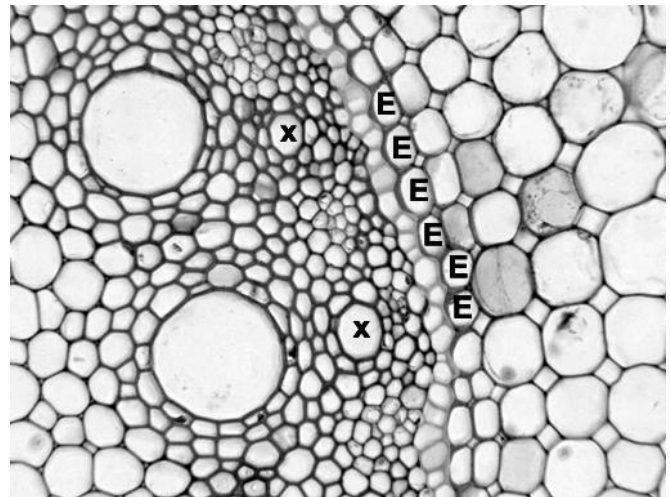
11. One of the following specialized roots is fictitious (it does not exist):

- a. Photosynthetic roots
- b. Contractile roots
- c. Water storage roots
- d. Defensive roots
- e. Roots with nodules

12. Examine the cross-section on the right, in which "E" indicates the endodermis, and determine if it belongs to a root or a stem.

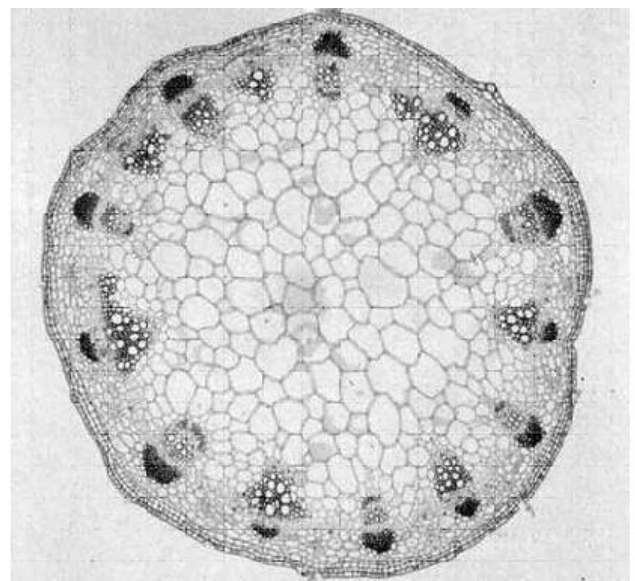
Based on this, answer the following question:
What is the tissue marked with "x"?

- a. Pericycle
- b. Protophloem
- c. Protocycle
- d. Protoxylem
- e. Parenchyma



13. The cross-section on the right belongs to:

- a. a herbaceous monocot stem
- b. a herbaceous dicot stem
- c. a woody dicot stem
- d. an aquatic dicot stem
- e. an aquatic monocot stem



14. Select the correct labeling for the woody stem at the right:

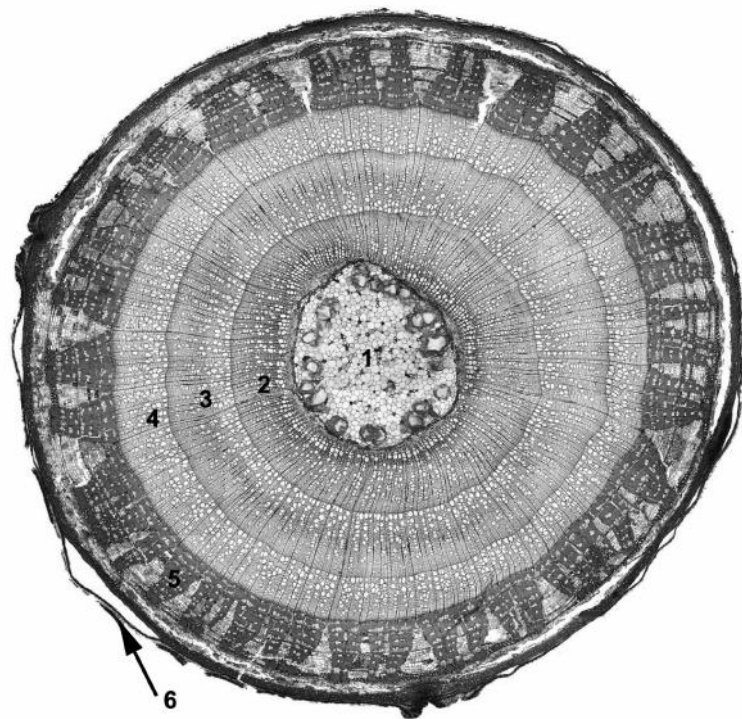
a. 1 = pith, 2 = annual ring produced in the third year, 3 = annual ring of the second year, 4 = annual ring of first year; 5 = secondary phloem 6 = periderm

b. 1 = pith, 2 = annual ring of 3rd year, 3 = annual ring of 2nd year, 4 = annual ring of 1st year; 5 = secondary phloem 6 = epidermis

c. 1 = pith, 2 = annual ring of first year, 3 = annual ring of second year, 4 = annual ring of third year; 5 = secondary phloem; 6 = periderm

d. 1 = cortex, 2 = annual ring of first year, 3 = annual ring of second year, 4 = annual ring of third year; 5 = annual ring of 4th year; 6 = periderm

e. 1 = cortex, 2 = annual ring of first year, 3 = annual ring of second year, 4 = annual ring of third year; 5 = annual ring of 4th year; 6 = epidermis

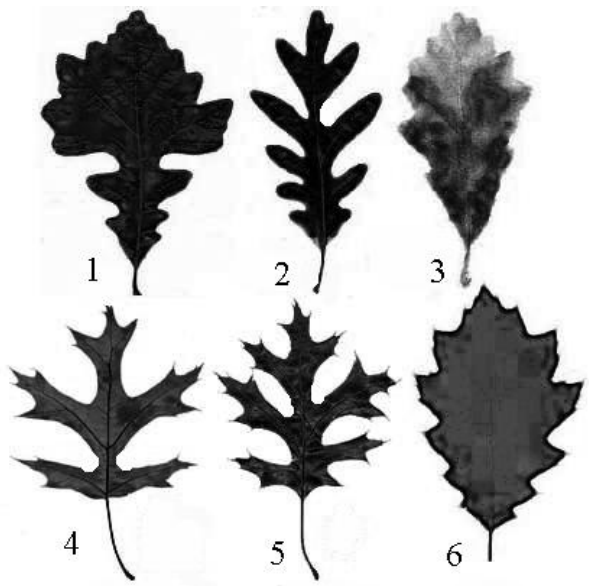


15. Which of the following modified stems is not underground?

- a. Rhizomes
- b. Cladophylls
- c. Stolons
- d. Runners
- e. Adventitious

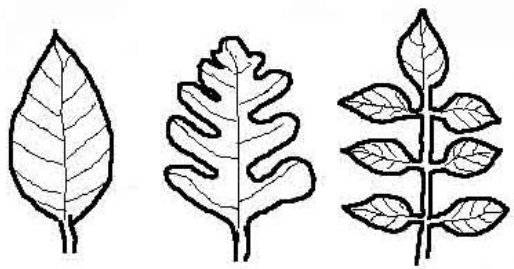
16. The 6 leaves in the image at the right are:

- a. Lobed -- all of them
- b. Only 3 and 6 are lobed.
- c. Sinuate -- all of them
- d. Only 1,2, 4 and 5 are lobed.
- e. None of them is lobed.



17. What do these three leaves have in common?

- a. They have parallel venation
- b. They are compound
- c. They are simple
- d. They have pinnate venation
- e. They are oblong



18. One of the following modified leaves is bogus (does not exist):

- Leaf transformed into spines
- Symbiotic leaves
- Carnivorous leaves
- Leaves adapted to do photosynthesis in the dark
- Colorful leaves with advertising role that accompany the flowers

19. Choose the answer with correct labeling:

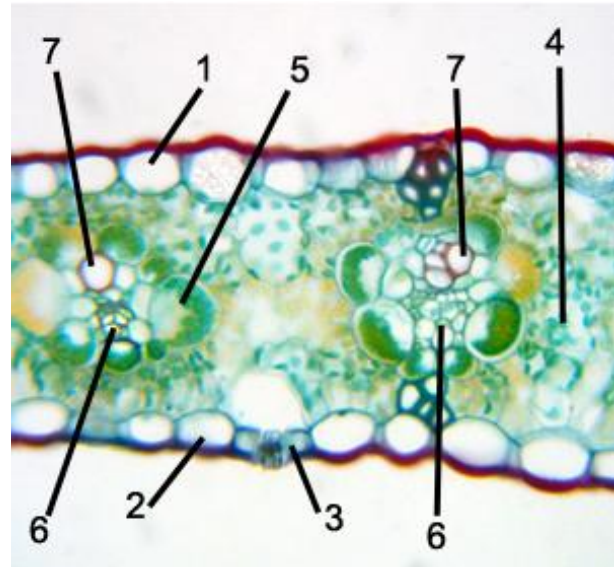
a. 1 = epidermis; 2 = epidermis; 3 = stomata;
4 = mesophyll; 5 = bundle sheath;
6 = phloem; 7 = xylem

b. 1 = epidermis; 2 = hypodermis;
3 = stomata; 4 = mesophyll;
5 = bundle sheath; 6 = phloem; 7 = xylem

c. 1 = epidermis; 2 = epidermis;
3 = stomata; 4 = mesophyll;
5 = bundle sheath; 6 = xylem; 7 = phloem

d. 1 = epidermis; 2 = epidermis; 3 = stomata;
4 = mesophyll; 5 = endodermis;
6 = phloem; 7 = xylem

e. 1 = epidermis; 2 = epidermis; 3 = stomata;
4 = mesophyll; 5 = bulliform cells;
6 = phloem; 7 = xylem



20. The leaf at the right is most likely from...

- An aquatic plant
- A xerophytic plant
- A plant growing in a highly polluted environment
- A plant growing in the shade
- This is a bract, not a leaf

