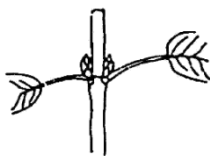


Part 1. Tree Identification

1. Using the specimens on the table, write the correct species of tree/shrub using both the common and scientific names. Spelling and capitalization MUST be exact! [6 points, 0.5 points each]

Specimen ID	Common Name	Scientific Name
a.	Douglas fir	<i>Pseudotsuga menziesii</i>
b.	Giant Sequoia	<i>Sequoiadendron giganteum</i>
c.	Ponderosa Pine	<i>Pinus ponderosa</i>
d.	Coast Redwood	<i>Sequoia Sempervirens</i>
e.	Red Alder	<i>Alnus rubra</i>
f.	Bigleaf Maple	<i>Acer macrophyllum</i>

2. Dichotomous keys are essential tools for dendrologists. Label the following common tree characteristics with the appropriate term provided. [2 points, 0.5 points each]



a. opposite



b. terminal bud



c. lateral bud



d. lobed

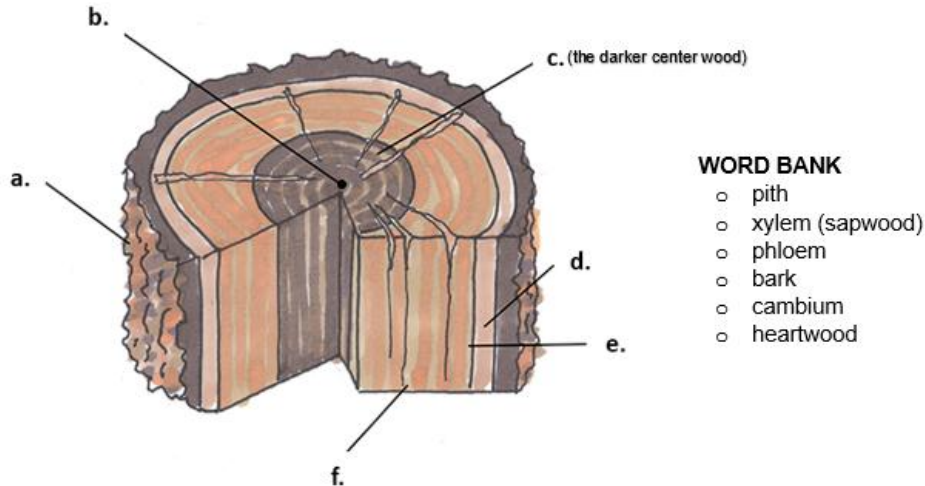
Dichotomous Key Terms

- ☐ compound
- ☐ whirled
- ☐ alternate
- ☐ gapped
- ☐ serrated
- ☐ opposite
- ☐ lobed
- ☐ terminal bud
- ☐ lateral bud

_____ / 8 points

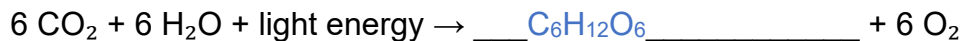
Part 2. Tree Physiology and Forest Ecology

3. Using the diagram below, label the parts of the tree and describe the key function or use of each part. [6 points, 0.5 points each]



Indicator:	Name:	Function or Use:
a.	bark	protects
b.	pith	very center of tree helps determine age
c.	heartwood	provides structure
d.	phloem or inner bark	moves nutrients from leaves/needles to other parts of tree
e.	cambium	where new growth occurs
f.	xylem or sapwoods	transports water within the tree

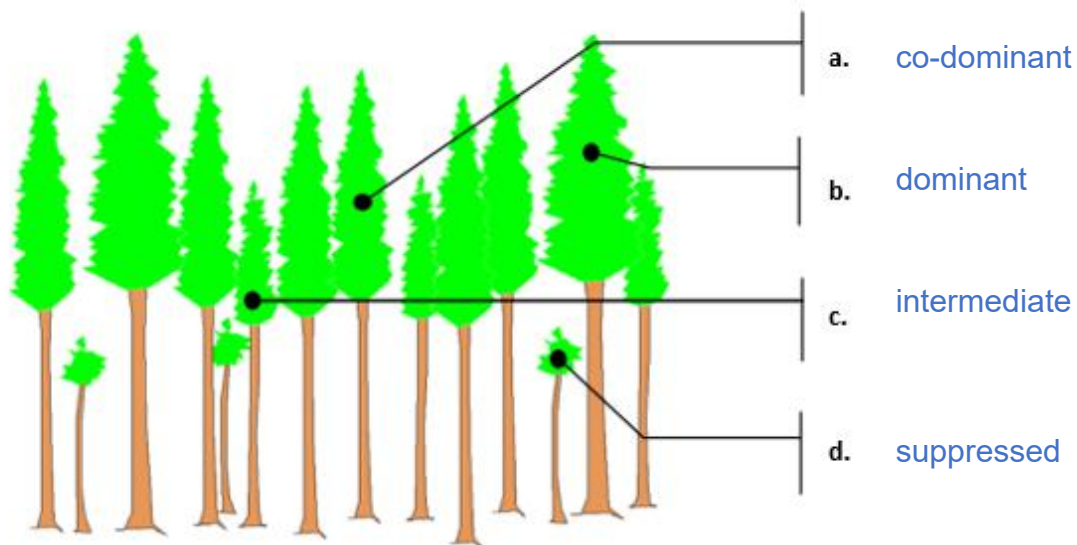
4. Complete the balanced chemical equation for photosynthesis: [1 point]



5. Trees produce glucose during photosynthesis. The process that breaks down glucose to release usable energy is called cellular respiration. [1 point]

____ / 8 points

6. Using the Crown Class Diagram below label each of the trees below as “dominant”, “co-dominant”, “intermediate”, or “suppressed.” [4 points]



7. In a closed-canopy stand, which crown class is most likely to experience the highest mortality over time, and why? [2 points, 1 for class, 1 for reason]

Suppressed. Possible reasons: limited light, reduced growth, or increased competition stressors

8. In a clearcut harvest, all crown classes are removed, creating an open area where new trees can grow with full ____sunlight_____. [1 point]

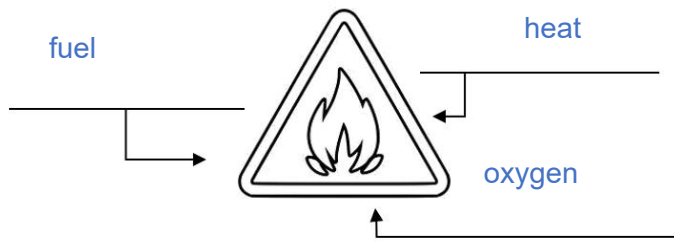
9. Uneven-aged management is best described as: [1 point]

- a) Trees all the same age
- b) Two age classes only
- c) Three or more age classes in one stand
- d) No trees present

_____ / 8 points

Forest Ecology

10. Label the three elements of the fire triangle, which are essential for combustion to occur. [3 points]



11. A forest stand has heavy ladder fuels. What is the main concern of this forest condition? [1 point]

- a) Longer surface fire duration
- b) Faster horizontal fire spread
- c) Higher risk of crown fire
- d) Extended smoldering, causing root damage

12. What role does prescribed fire play in silvicultural management? [1 point]

- a) It permanently increases soil fertility over time.
- b) It promotes natural regeneration, reduces competition, and decreases fire risk.
- c) It directly accelerates tree growth rates.
- d) It eliminates the future need for stand management.

____ / 5 points

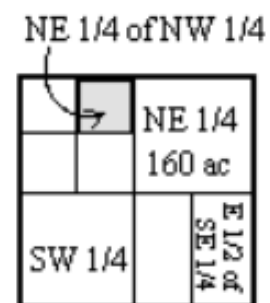
Part 3. Forest Practices Act & Sustainable Forest Management

Using the resources provided, answer questions 13 -20.

13. What is the main purpose of the Oregon Forest Practices Act, established in 1971? [1 point]
- a) To prohibit all commercial logging on public and private lands
 - b) To maximize timber production by eliminating environmental restrictions
 - c) To regulate forest activities to protect water quality, wildlife habitat, and reforestation
 - d) To transfer forest management responsibilities from landowners to the state
14. ____ Oregon Department of Forestry _____ is responsible for enforcing the Oregon Forest Practices Act. [1 point]
15. A landowner in western Oregon is conducting a clearcut harvest and wants to meet Oregon Forest Practices Act requirements while also supporting wildlife habitat. Which of the following actions BEST aligns with these goals? [1 point]
- a) Remove all standing dead trees (snags) to reduce safety hazards and maximize timber value
 - b) Retain a mix of live “leave trees” and existing snags across the harvest unit to provide wildlife habitat
 - c) Leave only small, non-commercial trees since they have no economic value.
 - d) Focus retention only along roads and edges, leaving the interior of the harvest unit completely clear

16. The legal description of a forested property is NE $\frac{1}{4}$ of NW $\frac{1}{4}$, S. 24, Township 3N, Range 4E. How many acres is the property? [1 point]

- a) 100
- b) 50
- c) 40
- d) 640



____ / 4 points

Forest Ecology

17. Nearly half of Oregon is forestland. What percentage of Oregon's forestland is managed by the federal government? [1 point]

60%

18. Which of the following phrases best completes this statement about forest certification? [1 point]

Forest certification gives wood product consumers, architects, engineers, and builders assurance that products were produced using _____ forestry practices.

- a) Efficient and productivity-focused
- b) Responsible and sustainable
- c) Experimental and variable
- b. Short-term and production-focused

19. Which of the following statements about engineered wood manufacturing in Oregon is correct? [1 point]

- a) Oregon has no engineered wood manufacturing plants
- b) All engineered wood products in the U.S. are produced in Oregon
- c) Oregon is home to 18 of the 77 engineered wood manufacturing plants in the U.S.
- d) Engineered wood products are not produced in the United States

20. A forest landowner in eastern Oregon notices that several ponderosa pine trees are dying. The trees show pitch tubes on the bark and evidence of serpentine insect galleries under the surface. Which pest is MOST likely responsible, and what is an appropriate management response? [1 point]

- a) Western Pine Beetle; remove and properly dispose of infested trees to prevent spread
- b) Red Turpentine Beetle; apply fertilizer to improve vigor
- c) Pine Engraver Beetle; thin only healthy trees
- d) Flatheaded Borers; thin only healthy trees

____ / 4 points

Part 4. Biometry & Forest Measurements

There are four trees marked with the letters A, B, C, and D, and a tree cookie specimen. Using the tool and information specified below, answer the following questions on biometry and forest measurements.

21. Using the Woodland Stick, what is the diameter (DBH) of Tree A? [1.5 points]

TBD – I need to go measure the exact tree

22. Using a Diameter or Logger's Tape, what is the diameter (DBH) of Tree B? [1.5 points]

TBD – I need to go measure the exact tree

23. Using the Woodland Stick, what is the total height of Tree C, given that you are 100 feet from the base of the trees? [1.5 points]

TBD – I need to go measure the exact tree

24. Using a Clinometer, what is the total height of Tree D, given that you are 100 feet away from the base of the tree? [1.5 points]

TBD – I need to go measure the exact tree

25. Using a Tree Carbon Tape, Tree B is storing the carbon equivalence of how many car miles? [1.5 points]

TBD – I need to go measure the exact tree

26. What is the age of this cookie specimen? [1.5 points]

TBD – I need to go measure the exact cookie

27. A forester uses a prism and counts 10 “in” trees at a sample point with a basal area factor (BAF) of 10. What is the estimated basal area per acre? [1 point]

a) 10 ft²/acre

b) 50 ft²/acre

c) 100 ft²/acre

d) 1,000 ft²/acre

28. A student is helping measure logs at a forestry competition using the Doyle Log Rule. What information do they NEED in order to calculate volume? [1 point]

Log diameter and log length

____ / 11 points

Part 5. Non-Point Source Pollution: It Begins at Home!

29. A stream below a harvest unit shows increased turbidity after operations. What is the MOST likely cause? [1 point]

- a) Increased dissolved oxygen
- b) Sediment runoff from disturbed soils
- c) Reduced sunlight penetration
- d) Increased groundwater recharge

30. A 40-acre forest property in western Oregon is scheduled for harvest and includes steep slopes, a fish-bearing stream, and existing forest roads. After the first winter storm, the stream shows increased turbidity. Name two Best Management Practices (BMPs) that could reduce sediment entering the stream. [1 point, 0.5 point each BMP]

ANY TWO:

- riparian buffers
- road drainages
- road surfacing/gravel
- proper culvert installation
- limiting operations in wet conditions
- erosion control (seeding/mulching/planting)
- slash placement or other barriers

____ / 2 points