

**2004 California Envirothon
Forestry Test
100 points
Suggested Time To Complete This Test - 35 Minutes**

Please write your team number and flagging color on the top of each test page. You may un-staple the test and work on the questions in any order, however, pages should be returned to the correct order when you turn them in. You can choose to split your team up and work on multiple questions to expedite your finishing of the test. Please show all of your work, as you could obtain partial credit. GOOD LUCK!

NOTE: () denotes maximum # of points for the question.

1. Some trees native to the region are listed below. Please fill in the appropriate blank with the appropriate common name, Genus or species. **(6 pts)** (Biology/Life Sciences - Ecology 6.a,b,f)

<u>common name</u>	<u>Genus</u>	<u>species</u>
California sycamore	_____	racemosa
_____	Alnus	rhombifolia
Douglas-fir	_____	_____
white fir	Pseudotsuga	_____
_____	_____	concolor
incense-cedar	Pinus	lambertiana
_____	Calocedrus	_____

2. Identify the tree samples given on the table at the station check-in. Provide common name, Genus and species for each. **(8 pts)** (Biology/Life Sciences - Ecology 6.a,b,f)

<u>Sample #</u>	<u>common name</u>	<u>Genus</u>	<u>species</u>
1.	_____	_____	_____
2.	_____	_____	_____
3.	_____	_____	_____
4.	_____	_____	_____

3. Using the attached oak tree key (Appendix A), find what kind of tree the orange flagged tree is. Show your steps for possible partial credit. **(4 pts)** (Investigation and Experimentation 1.a)

common name: Genus: species:

4. Using the clinometer, what is the total height of the tree flagged with yellow and black striped flagging (nearest even two foot increment)? **(4 pts)** (Investigation and Experimentation - 1.a)

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5. Using a 20 BAF prism, and standing at the designated plot center, mark the appropriate answer for each of the four lettered trees with an "X". (4pts) (Investigation and Experimentation 1a)

Tree Letter	In	Out
A	_____	_____
B	_____	_____
C	_____	_____
D	_____	_____

6. Using the data from question 6, how much basal area per acre (square feet) is represented by your sample? (2 pts) (Investigation and Experimentation - 1.a,l)

7. Use your diameter tape to obtain the DBH, your Biltmore stick to obtain the number of whole logs, and the Scribner Decimal C volume table provided (Appendix B), to obtain the volume, **in board feet**, of the blue flagged tree. Assume 16-foot logs are being used. Show your work. (10 pts) (Investigation and Experimentation - 1.a,g)

Tree DBH (nearest inch): _____ # of whole 16 ft. logs: _____
 Volume from table (**Board Feet**): _____ (note that the table is in tens of board feet)

8. The local mountains have experienced unprecedented tree mortality over the last few years. List 3 things that you think have contributed to this mortality. (6 pts) (Biology/Life Sciences - Ecology 6.a,b,c,d,e,f; Earth Sciences - Energy in the Earth System 4.a,b,c and 5.a,b; Earth Sciences: Biochemical Cycles: 7a,b)

1. _____
2. _____
3. _____

9. "Urban forestry is a specialized branch of forestry that has as its objective the cultivation and management of trees for their present and potential contribution to the psychological, sociological, and economic well-being of urban society. Inherent in this function is a comprehensive program designed to educate the urban populace on the role of trees and related plants in the urban environment. In it's broadest sense, urban forestry embraces a multi-managerial system that includes municipal watersheds, wildlife habitats, outdoor recreation opportunities, landscape design, recycling of municipal wastes, tree care in general, and the future production of wood fiber as raw material."

Given the above definition of Urban Forestry, list 4 unique challenges to establishing a forest in an urban environment. All reasonable answers will be considered. (8 pts)
 (http://www.urbanforestrysouth.org/pubs/Tech_bulletin/tb2.htm)

1. _____
2. _____
3. _____
4. _____

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10. What is meant by the terms: even-aged silvicultural system and uneven-aged silvicultural system? (4 pts) (Investigation and Experimentation - 1.a)

Even-aged:

Uneven-aged:

11. Give an example of an even-aged silvicultural system and an example of an uneven-aged silvicultural system. (4 pts) (Investigation and Experimentation - 1.a)

Even-aged:

Uneven-aged:

12. Briefly explain what the function of the following tree parts are. (5 pts) (Biology/Life Sciences - Structure and Function in Living Systems 9.a; Earth Sciences - Biogeochemical Cycles 7.a,b,c)

Xylem _____
phloem _____
leaves _____
roots _____
cambium _____

Using the map provided (Appendix C), answer questions 13, 14, and 15. (Investigation and Experimentation - 1.h)

13. What is the legal description, to the ¼, ¼ section, of the San Gorgonio Memorial Hospital building icon? (4 pts)

14. Using the San Bernardino National Forest Map legend (Appendix D), is the land in Section 7, T2S, R1E owned by the federal government, the state government, a local government, a Native American tribe or by a private land owner (note: private land shown as white)? (2 pts)

15. Using what you know about the U.S. Public Land Survey, what is the acreage represented by the darkly lined ownership in Section 16, T2S, R1W, San Bernardino Base and Meridian. (2 pts) (Note: the ownership is labeled for you.)

16. Name the three sides of the fire triangle. (3 pts) (Investigation and Experimentation - 1.i)

- 1.
- 2.
- 3.

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17. Name four benefits and four detriments of wildfire. All reasonable answers will be considered. (8 pts)
(Biology/Life Sciences - Ecology 6.a,b) (Investigation and Experimentation - 1.i)

Benefits
1. _____
2. _____
3. _____
4. _____

Detriments
1. _____
2. _____
3. _____
4. _____

18. Define the forestry terms below: (4 pts)(Biology/Life Sciences - Ecology 6.a,b,c,e,f;
8.b,d) (Investigation and Experimentation - 1.a)

suppressed tree:

board foot:

snag:

basal area:

19. Using the compass, give the bearing and the azimuth from point "X" to point "Y" to the nearest degree. (Investigation and Experimentation - 1.h)

bearing (2 pts):

azimuth(2 pts):

20. Forested land can be classified by it's productivity. This classification is based on tree height, growth, and age. Use the attached site index table (Appendix E, Table 2) and site classification table (Appendix E, Table 3) to determine the site index and site class of a hypothetical pine stand that has an average height of 88 feet at an age of 80 years. (4 pts) (Investigation and Experimentation - 1.g)

Site index: _____

Site class: _____

21. Trees in an area that are classified as site class V will grow very slow, while trees in an area that are classified as site class I will grow very vigorously. Based on your answer to question 21: (a) What would you say about the productivity of the hypothetical pine stand? (b) Is the land that the stand occupies a good place to grow trees for lumber? (4 pts) (Investigation and Experimentation - 1.g) (Investigation and Experimentation - 1.a)

a) _____

b) _____
