

School or Team Name _____

CT Envirothon Forestry Test - 2016

Where appropriate circle the correct answer(s) and be sure to answer questions on both sides of the page. Each correct answer is 2.5 points. Use two part common names unless otherwise instructed. Use the tree scale stick as needed for measurements. Write your school name on each page of test.

1. Even though Connecticut is one of the nation's most densely populated states, it is also one of the most heavily forested - nearly 60% of our land base is in forest. **True** or False
2. The vast majority of CT's forest lands are privately owned. **True** or False
3. The poor condition of Connecticut's forests in the late 1800s and early 1900s helped spur the conservation movement in CT. **True** or False
4. The CT DEEP Forestry Division "Service Forestry Program" provides Connecticut forest landowners with professional planning and technical on-the-ground forestry assistance. **True** or False
5. The art and science of manipulating the pace of nature in the forest and controlling forest establishment, composition, structure and individual tree growth is called:
 - a. Horticulture
 - b. **Silviculture**
 - c. Landscape management
 - d. Arboriculture
6. Generally, two site factors that have the most influence on the development of trees within a stand, and on which foresters can have a significant influence are:
 - a. Insects and fungus diseases
 - b. Soil moisture and water table
 - c. **Light and space in the canopy**
 - d. Soil fertility and acidity
7. Forest fragmentation:
 - a. Reduces economic benefits of forest
 - b. Reduces wildlife habitat and biodiversity
 - c. Reduces recreational opportunities
 - d. Compromises clean air and water
 - e. **All of the above**

School or Team Name _____

Field Station #1: Questions #8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18:

8. At **Field Station #1** look carefully at the forested areas on either side of the roadway. You'll notice a stark difference between the **upland area** and the **lowland area** on the other side of the road. Why might this be? How might this be explained?

- a. There is a difference in moisture, drainage and elevation between the two areas.
- b. The soils in the upland area are well drained compared to those in the lowland area.
- c. Plants species differ in their site requirements for growth.
- d. The areas represent two distinct ecosystems.
- e. Wetlands support biogeochemical processes distinct from upland ecosystems.
- f. All of the above.**

9. Both of these areas can be described as having a contiguous group of trees of sufficiently uniform species composition, age and condition to be considered a homogenous unit for management purposes. This unit is technically known as a forest:

- a. mosaic
- b. landscape
- c. canopy
- d. stand**
- e. stratification

10. **Tree #1** is a: (circle correct answer)

- a. Red pine
- b. Eastern hemlock
- c. White pine**
- d. Norway Spruce

11. **Tree #1** has how many needles per bundle (cluster)?

- a. One
- b. Two
- c. Three
- d. Four
- e. Five**

12. **Tree #1** has a diameter at breast height (dbh) of: 10"; **18"**; 22"; 30" (circle correct answer)

13. **Tree #2** is a:

- a. Black birch
- b. Yellow birch**
- c. Red oak
- d. White oak

School or Team Name _____

14. Tree #3 is a:

- a. Black birch
- b. Yellow birch
- c. Red oak
- d. **White oak**

15. Tree #4 is a:

- a. **Black birch**
- b. Yellow birch
- c. Red oak
- d. White oak

16. Tree #5 is a:

- a. Black birch
- b. Yellow birch
- c. **Red oak**
- d. White oak

17. Tree #5 has a diameter at breast height (dbh) of: 18"; **24"**; 28"; 32" (circle correct answer)

18. Tree #5 could be described as:

- a. in declining health as evidenced by wounding and scarring near the base of the tree
- b. damaged by fire, lightening or other natural events
- c. producing low quality wood products in its first 16' log
- d. a potential source of food and shelter for wildlife
- e. **All of the above**

Field Station #2: Questions: 19, 20, 21, 22 & 23:

TREE STUMP: The stump of this recently cut tree gives some clues as to its age, growth pattern, and overall health. By examining this tree stump, answer the following questions. (Circle correct answers.)

19. Does this tree stump shows signs of wood decay? **Yes** or No

20. Over the life of this tree what was its growth pattern?

- a. It had a consistent rate of growth over the course of its life.
- b. When it was young, it started out growing slowly, but increased its rate of growth as it matured.
- c. **Early on it exhibited good growth, but as it matured its rate of growth slowed down considerably.**

School or Team Name _____

Field Station #2: Questions:19, 20, 21, 22 & 23:

TREE STUMP: The stump of this recently cut tree gives some clues as to its age, growth pattern, and overall health. By examining this tree stump, answer the following questions. (Circle correct answers.)

21. To what might you attribute this tree's growth pattern and its overall condition?
- It grew up in the open with little competition.
 - It grew up in a forest with other trees, where for many years they competed for available sunlight, water, nutrients and space.**
22. Would you expect other trees in this area to have similar growth characteristics? **Yes** or **No**
23. If you returned in 10 years to this spot where this tree stump is located, what would you expect to see? (Circle correct answer.)
- Nothing has changed at all, the area remains the same.
 - Many small tree seedlings are growing here in dense clusters on the forest floor.**
 - The area has been sold and a house has been built here.
 - The area has been excavated for a source of gravel to maintain the roadways.

Questions #24 & 25:

24. You are being asked, as a CT DEEP Service Forester, to give the landowners who operate "The Indian Rock Nature Preserve" some basic advice on how to manage this "upland forest area." The landowners have shared with you their **goals** for the use of the property, which include: education (nature study, develop forestry demonstration areas), protection of trails and important natural and cultural features, passive recreation, and wildlife habitat. **Based on this information and an examination of the upland area, what would be your assessment of this area:**

- This area is comprised of a number of large, older, mature trees.
 - Some of the trees are in declining health due to competition, insects, diseases and storm damage.
 - This area has a relatively closed canopy, and as a result there is not much sunlight reaching the forest floor to promote natural regeneration.
 - The area poses some risks and liabilities due to dead and dying trees especially near the trails.
 - The area provides a source of nesting, shelter and feeding sites for wildlife.
 - All of the above.**
25. **Based on the above information, which of the following options would you recommend to the landowners for management of this area?**
- Leave the area alone, no actions are recommended.
 - Clearcut all the trees and use the revenue to operate the nature center.
 - Remove any hazardous trees near the trails or roadways.
 - Implement a silvicultural system, or harvesting and regeneration method, that targets removal of the poorest quality trees and also encourages natural seedling regeneration for the future.
 - Retain some snag and den trees within the area to benefit wildlife.
 - Only c., d., and e.**

School or Team Name _____

Tree Identification Section – Match the phrase with the correct diagram on THIS page.

a. Opposite branching **#2**

1.



b. Alternate branching **#1**

2.



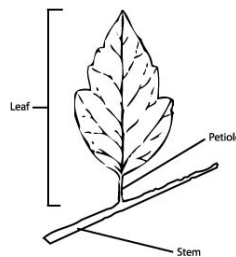
c. Whorled branching **#3**

3.



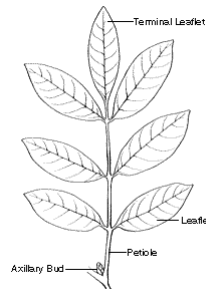
d. Simple leaf **#4**

4.



e. Compound leaf **#5**

5.



School or Team Name _____

Tree Identification Section – Match the phrase with the correct diagram on THIS page.

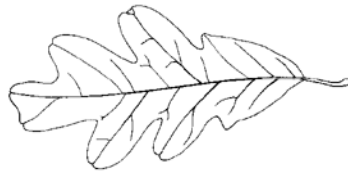
f. Smooth leaf margin **#8**

6.



g. Serrate leaf margin **#6**

7.



h. Doubly serrate margin **#9**

8.



i. Lobed leaf **#7**

9.

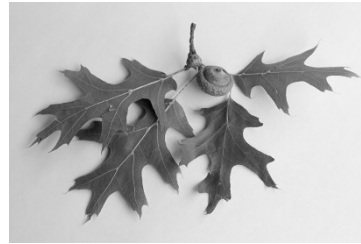


School or Team Name _____

Tree Identification Section – Match the phrase with the correct diagram on THIS page.
(Each number may be used more than once.)

j. Evergreen leaves **#13 or 14**

10.



k. Deciduous leaves **#10 or 12 or 15**

11.



l. Needles in bundles (clusters) **#14**

12.



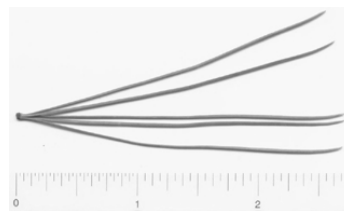
m. White oak leaves **#15**

13.



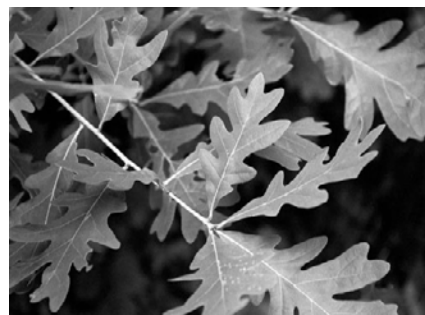
n. Red oak leaves **#10**

14.



o. Fruit **#10 or 11 or 13**

15.



School or Team Name _____

Current Issue Questions: Invasive Species (10 points total)

1. Which of the following is true about the impact of invasive species? Invasive species can:
 - a. Contribute to the decline of indigenous species.
 - b. Cause economic loss.
 - c. Harm human health.
 - d. All of the above.**

2. Estimates keep going up as to the annual economic costs of damage by, and management of, invasive species. Which is the best ball park figure of the current annual economic loss due to invasive species in the United States?
 - a. 90 to 137 billion dollars/year**
 - b. 5 to 7.5 billion dollars/year
 - c. 900 million to 1.2 billion dollars/year
 - d. 0 to 100 million dollars/year

3. Non-native invasive insects and diseases have had a major impact on Connecticut's forest health and composition. These include:
 - a. Chestnut Blight
 - b. Gypsy Moth
 - c. Dutch Elm Disease
 - d. Hemlock Woolly Adelgid
 - e. Only a., b. and c.
 - f. All of the above.**

4. Examples of Non-Native Invasive plant species found in Connecticut that adversely affect forest ecosystems include:
 - a. Tree-of-Heaven, Black locust, and Norway maple
 - b. Multiflora rose, Asiatic bittersweet, and Japanese barberry
 - c. Autumn olive, Winged euonymus, and Norway Spruce
 - d. Only a. and b.**
 - e. All of the above.

5. Why should one be concerned about Non-native invasive plants and Connecticut's forest ecosystems?
 - a. Forest ecosystems still occupy nearly 60% of the Connecticut landscape.
 - b. With increasing forest fragmentation, seed sources of Non-native invasive plants are in much closer proximity to forest edges.
 - c. Non-native invasive plants have a great effect on forest succession, disrupting natural patterns.
 - d. Non-native invasive plants alter soil conditions and habitat.
 - e. Non-native invasive plants out- compete native species and lower bio-diversity.
 - f. All of the above.**
 - g. Only c., d., and e.