

CT Envirothon Forestry Test 2020

Connecticut Forest History



1. Connecticut's Forest Cover might have looked like this in the **(3 pts)**
 - a. 1500s
 - b. 1600s-1700s
 - c. 1800s
 - d. 1900s

2. It looked like this because of **(3 pts)**
 - a. Early settlement
 - b. Sheep-farming fever
 - c. Abandonment
 - d. Regeneration



3. This photo of a section of a present-day forest shows this was once a **(3 pts)**

- a. Farm road
- b. Stream bed
- c. Holding pen for sheep
- d. Vegetable garden

Forest Ecology

Using the species choices from this word bank, match the appropriate species with its best growing site for questions 4-5.

American larch	Chestnut oak
Pin oak	Red maple
Red oak	White pine

4. Thin, well-drained, hilltop soils **(3 pts)**

Chestnut oak

5. Deep, mesic soils on lower or middle slopes **(3 pts)**

Red oak

6. In most years, the main limiting factor for tree growth and associated vigor in southern New England is lack of **(3 pts)**

- a. Water
- b. Soil nutrients
- c. Sunlight
- d. Carbon dioxide

7. Shade tolerance is **(3 pts)**

- a. How well seedlings can regenerate and grow in the shade of overtopping, taller trees
- b. How well mature trees get along on a cloudy day
- c. How soon trees leaf out in the spring
- d. How much shade is needed for one species to outgrow another species

8. Regeneration of beech trees can occur in shade of a fully closed canopy. **(2 pts)**

- a. True
- b. False

9. Best practices for land use within forested riparian areas include **(3 pts)**

- a. Clearing for agriculture
- b. Building roads
- c. Storing chemicals
- d. Single-tree selection silvicultural operations

10. Which is a benefit of a forested reservoir watershed? **(3 pts)**

- a. Minimizing erosion into public drinking water
- b. Speeding up spring snow melt to extend reservoir capacity
- c. Naturally filtering and cleaning water to increase chlorination
- d. Increasing understory diversity

11. Forested wetlands do not filter sediment from water. **(2 pts)**

- a. True
- b. False

Forest Management

12. The two basic forest management systems in New England based on shade tolerance and species distribution are

(3 pts)

- a. First shelterwood and Irregular shelterwood
- b. **Even aged and Unevenaged**
- c. High and Low thinning
- d. High grade and Clearcut

13. The most appropriate silvicultural prescription for attempting to regenerate oak is

(3 pts)

- a. Allow the area to continue to develop (i.e. no management),
- b. Light thinning,
- c. **Shelterwood**
- d. Thinning from below

14. Which of the following tree species is best grown under the “Clearcut System” which more closely resembles natural conditions following a fire that allows for this shade intolerant species to thrive? **(3 pts)**

- a. White pine
- b. Sugar maple
- c. **Jack pine**
- d. Black Oak

15. Hardwoods such as sugar maple, hickory and ash are growing in good site index soils in a stand that a forester has been hired to manage. After a harvest to stimulate regeneration in this hardwood stand, would it be effective to plant and manage the forest for white pine? **(3 pts)**

- a. Yes
 - b. **No**
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Measurement

Timber Volume Tables

International 1/4" board foot volume

Form Class 78

DBH (in)	Merchantable Height in Logs (16 ft. sections)									
	1/2	1	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2	5
12	30	56	74	92	106	120	128	137		
14	40	78	105	132	153	174	187	200		
16	60	106	143	180	210	241	263	285		
18	70	136	184	233	274	314	344	374		
20	90	171	234	296	348	401	440	480	511	542
22	110	211	290	368	434	500	552	603	647	691
24	130	251	346	441	523	605	664	723	782	840
26	160	299	414	528	626	725	801	877	949	1021
28	190	347	482	616	733	850	938	1027	1114	1201
30	220	403	560	718	854	991	1094	1198	1306	1415
32		462	644	826	988	1149	1274	1400	1518	1637
34		521	728	934	1119	1304	1447	1590	1727	1864
36		589	826	1063	1274	1485	1650	1814	1974	2135
38		656	921	1186	1428	1670	1854	2038	2224	2410
40		731	1030	1329	1598	1868	2081	2294	2494	2693

16. Use the table above. The tree is 24" DBH and 2.5 logs in merchantable height. What is its board foot volume? **(2 pts)**

- a. 368
- b. 200
- c. 62
- d. 523

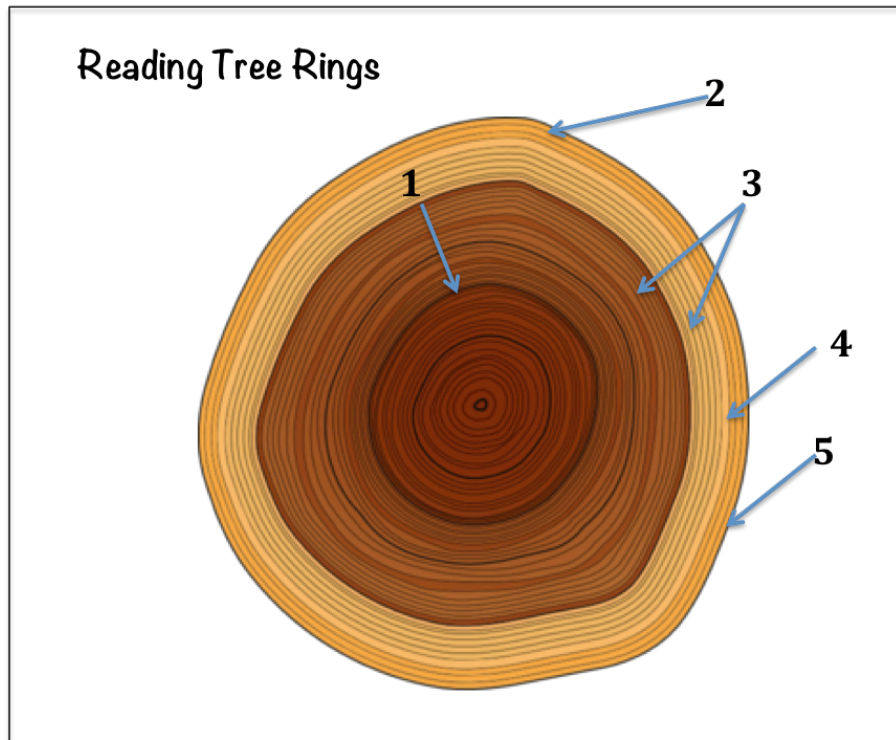
17. How high up is DBH measured? **(3 pts)**

- a. 2.5 ft.
- b. 3.5 ft.
- c. 4.5 ft.
- d. 5 ft.

18. When using a Biltmore stick, how many feet away from a tree do you stand to measure its merchantable height? **(3 pts)**

- a. 25
 - b. 36
 - c. 66
 - d. 100
-

Tree Physiology



19. In the diagram above, #3 is pointing to **(3 pts)**

- a. Cambium
- b. Heartwood
- c. Phloem
- d. Xylem

20. The phloem layer of a tree **(3 pts)**

- a. Carries water and minerals up from the roots to the leaves
- b. Carries water and the sugar made in the leaves to other tree parts
- c. Protects the tree from injury caused by insects, disease, animals, fire
- d. Is made of dense, dead wood

21. Which layer of a tree makes cells that become new phloem, cambium, and xylem? **(3 pts)**

- a. Cambium
- b. Heartwood
- c. Phloem
- d. Xylem

Tree Identification



Robert H. Mohlenbrock, USDA-NRCS PLANTS

22. Which tree is shown in the above photos? **(3 pts)**

1. White oak
2. Sassafras
3. Black locust
4. Tulip



23. Which tree is shown in the above photos? **(3 pts)**

- a. Shagbark hickory
- b. White oak
- c. Red oak
- d. Pignut hickory



24. Which tree is shown in the above photos? **(3 pts)**

- a. Eastern hemlock
- b. Norway spruce
- c. Balsam fir
- d. Eastern white pine

Using this answer key, fill in the correct answers to questions 25-27. Choose common name OR scientific name. Not both.

American larch	Acer saccharinum
Paper birch	Larix laricina
Red pine	Pinus resinosa
Silver maple	Quercus alba
White oak	Betula papyrifera

25. This tree rarely lives as long as 150 years. It grows rapidly and its light seeds need to land on exposed mineral soil with plenty of light and moisture to germinate and thrive. This pioneer species occurs as a 'fringe' species along lake shores, or in more massive communities following fire or violent windstorms that remove other competitors. The flammable bark was an important commodity in one of the greatest technological achievements for the Algonquin Indians of northeastern North America, allowing them to do extensive trade. Name the tree. **(3 pts)**

Paper birch OR Betula papyrifera

26. Best growing conditions for this tree are found along rich, periodically inundated floodplains along rivers as well as swamps. It hybridizes with Connecticut's most common tree species, which is also found in swamps and river floodplains, but also dry, rocky hillsides. Hybrids of these two species are sometimes referred to as 'United' or 'Pink'. Name the tree. **(3 pts)**

Silver maple OR *Acer saccharinum*

27. This tree is another that benefits from fire. In Canada it is considered highly resistant to insect and fungal attack, but here in Connecticut it is being wiped out by *Matsucoccus matsumarae*, a scale insect which was first identified in Easton, CT in 1946. This infestation is moving northward and was first detected in Maine in 2014. Name the tree. **(3 pts)**

Red pine OR *Pinus resinosa*

28. Which of the following represents the correct progression of peak fall colors in Connecticut? **(3 pts)**

- a. Aspens/birches/larches followed by red maples followed by sugar maples
- b. Red maples followed by aspens/birches/larches followed by sugar maples
- c. Sugar maples followed by red maples followed by aspens/birches/larches
- d. Red maples followed by sugar maples followed by aspens/birches/larches

29. Connecticut oak species drop their acorns in the fall. Which species germinates first before winter sets in? **(3 pts)**

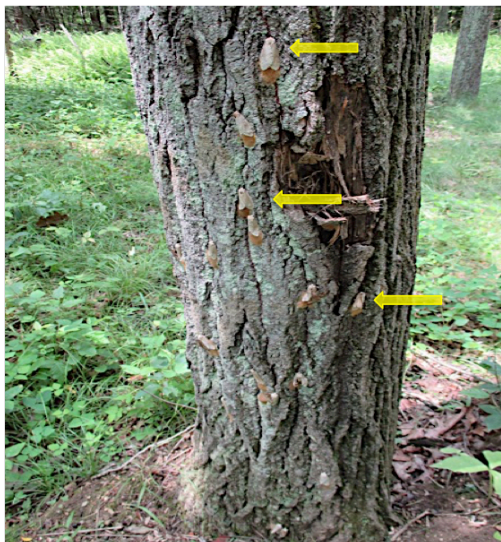
- a. White oak
 - b. Pin oak
 - c. Red oak
 - d. Black oak
-

Factors Impacting Forests



30. Which of the following invasive species is responsible for the damage to the trees in the above photos? **(2 pts)**

- a. Gypsy moth
- b. Emerald ash borer**
- c. Spotted lanternfly
- d. Asian longhorn beetle



31. Which of the following is laying egg masses in the above photo? **(2 pts)**

- a. Gypsy moth**
- b. Emerald ash borer
- c. Spotted lanternfly
- d. Southern pine beetle

32. Which tree species is a favorite host to the invader in the above picture? **(2 pts)**

- a. Hemlock
- b. Oak
- c. Ash
- d. Tulip

33. Which tree species here in Connecticut is a favorite host for the invasive Asian longhorn beetle? **(2 pts)**

- a. Oak
- b. White pine
- c. Maple
- d. Black locust

Forest products

34. Which of the following tree species is suitable for fence posts? **(2 pts)**

- a. White pine
- b. Eastern red cedar
- c. Black birch
- d. Red maple

35. Which forest product comes from a native Connecticut understory plant? **(2 pts)**

- a. Baseball bats
- b. Witch Hazel
- c. Maple syrup
- d. Turpentine

Forestry tools

36. Which is used to extract a core sample from a tree to view growth rings? **(2 pts)**

- a. Increment borer
- b. Calipers
- c. Clinometer
- d. Peavey

37. Which of the following tools is used to move logs on the ground? **(2 pts)**

- a. Pulaski
- b. Hoedad
- c. Peavey
- d. Log scale stick

(100 total points)