

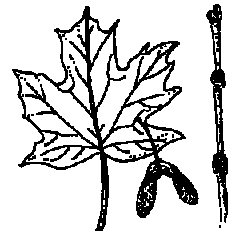
Wisconsin Envirothon 2005 Forestry Exam Answer Key

All questions are worth 2 points unless otherwise noted in the text.

Answer the following questions using the Tree Identification Key and the species description.

- 1) The buds on this tree are found opposite from each other.

- a) White ash
- b) Red oak
- c) Sugar maple**
- d) Black cherry



- 2) The needles of this tree are round and occur in bundles or groups.

- a) Tamarack
- b) White pine**
- c) Hemlock
- d) Black spruce



- 3) The buds of this tree alternate from side to side.

- a) Black Walnut
- b) Box Elder
- c) Paper birch**
- d) Swamp White Oak



- 4) The needles of this tree are flattened and scaly.

- a) Jack pine
- b) Tamarack
- c) Northern White Cedar**
- d) Black spruce



- 5) The buds on this tree alternate from side to side.

- a) Black ash
- b) White Oak**
- c) Yellow birch
- d) Beech



- 6) Which of the following conifers is considered to be deciduous?
- a) Red pine
 - b) Eastern red cedar
 - c) Tamarack**
 - d) White Spruce
- 7) Which of the following species is best adapted to dry upland sites?
- a) Bur oak**
 - b) Silver maple
 - c) Black spruce
 - d) River birch
- 8) Which of these species as a seedling in the understory is the least tolerant of shade?
- a) Aspen**
 - b) Hemlock
 - c) Yellow Birch
 - d) Red oak
- 9) Which of these species as a seedling in the understory is the most tolerant of shade?
- a) Paper Birch
 - b) Sugar Maple**
 - c) Black Walnut
 - d) Jack pine
- 10) Which of these species is adapted to withstand fire?
- a) Black locust
 - b) White spruce
 - c) Red oak**
 - d) Balsam fir

- 11) He was the first state forester in Wisconsin...
- a) J. Sterling Morton
 - b) E. M. Griffith**
 - c) Aldo Leopold
 - d) D. C. Everest
- 12) The first timber inventory of the state of Wisconsin was completed in what year?
- a) 1837
 - b) 1845
 - c) 1859**
 - d) 1868
- 13) That first inventory reported which of the following?
- a) Total volume of red and white pine was estimated at 130 billion board feet.**
 - b) That logging has been carried completed on 8,000,000 of the 17,000,000 acres of forest
 - c) The primary harvesting technique was clearcutting.
 - d) That more than 3.5 billion board feet of lumber was being produced annually.
- 14) Logging first became an important part of Wisconsin's economy in the ...
- a) 1840's
 - b) 1860's**
 - c) 1880's
 - d) 1890's
- 15) The period during which Wisconsin's forests were harvested and sold for agricultural lands is known as...
- a) Land Boom
 - b) Cutover**
 - c) Settlement
 - d) Conservation

Use this graphic for questions 16 through 19
Identify the parts of the tree using this cross-section of wood.

16) What part of the tree is identified by letter “a”:

- a) Sapwood
- b) Bark
- c) Cambium**
- d) Heartwood

17) What part of the tree is identified by letter “b”:

- a) Sapwood
- b) Bark
- c) Cambium
- d) Heartwood**

18) What part of the tree is identified by letter “c”:

- a) Sapwood**
- b) Bark
- c) Cambium
- d) Heartwood

19) What part of the tree is identified by letter “d”:

- a) Sapwood
- b) Bark**
- c) Cambium
- d) Heartwood

20) The cambium is the part of the tree where...

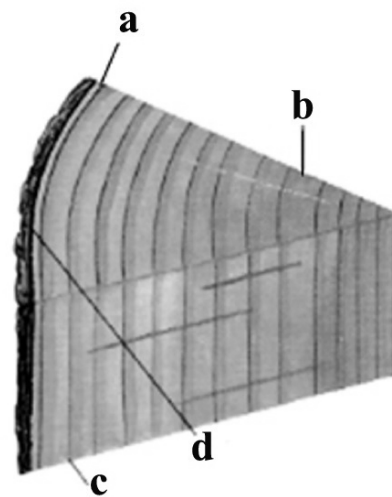
- a) Cells divide and grow.**
- b) Water and minerals are transported from the roots up the trunk and branches to the leaves.
- c) Sugars from the leaves are transported to the rest of the tree.

21) The phloem is the part of the tree where...

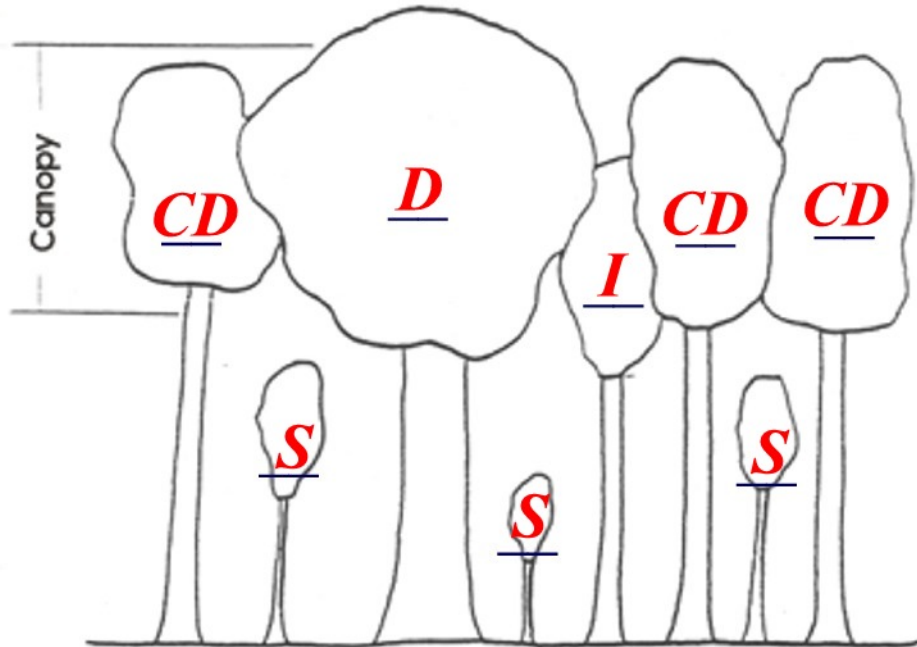
- a) Cells divide and grow.
- b) Water and minerals are transported from the roots up the trunk and branches to the leaves.
- c) Sugars from the leaves are transported to the rest of the tree.**

22) The xylem is the part of the tree where...

- a) Cells divide and grow.
- b) Water and minerals are transported from the roots up the trunk and branches to the leaves.**
- c) Sugars from the leaves are transported to the rest of the tree.



- 23) Trees occupy different positions in the canopy and understory. These positions are referred to as crown classes. Identify the trees in the graphic below as either (D) Dominant, (CD) Co-Dominant, (I) Intermediate, or (S) Suppressed. (8 points – 1 point for each correct answer)



- 24) Which of the following silvicultural treatments is an uneven-aged management strategy?
- a) Clearcut
 - b) Seed tree
 - c) Group selection**
 - d) Direct seeding or planting
- 25) Which of the following is an acceptable timber stand improvement practice in Wisconsin?
- a) Thinning**
 - b) Planting
 - c) Harvest
 - d) Fire
- 26) Which of the following best describes sustainable forest management?
- a) Letting nature take its course.
 - b) Meeting the needs of the today while providing for the needs of future generations.**
 - c) Harvesting the total average annual growth excluding mortality.
 - d) Intensive management that maximizes all productive values of the forest.

The following questions must be answered using the identified trees and available equipment. *Everything that you need to answer these questions has been provided.*

- 27) Using the cruising stick determine the basal area of this stand? (to be measured from plot center)
- a) 55 square feet per acre
 - b) 70 square feet per acre**
 - c) 85 square feet per acre
 - d) 100 square feet per acre

28) For each of the following trees (24 points – 2 points for each correct answer)

- a) Identify the following trees by their common name
- b) Using the cruising stick or a diameter tape measure each tree's Diameter at Breast Height rounded to the nearest 2 inches.
- c) Using the clinometer and 100' tape measure each tree's height rounded to the nearest 5 foot increment.

Tree #	Common Name	DBH (nearest 2 inches)	Height (nearest 5 foot)
1	White Pine	24	70, 75, 80
2	Sugar Maple	18	65, 70, 75
3	Red Pine	14	65, 70, 75
4	Red Oak	28	80, 85, 90



- 29) Tree #3 is 50 years old. What is the site index for this species?
- a) 59
 - b) 66
 - c) 70**
 - d) 78

- 30) The tag on tree #2 is approximately 5 feet above the ground. If tree #2 averages 18" of height growth per year how high above the ground will the tag be in 20 years?
- a) 5 feet**
 - b) 15 feet
 - c) 20 feet
 - d) 30 feet

Answer the following questions using the map on the following page...
Please print your answers clearly and legibly to get full credit

- 31) What is the name of the main road east of Lions Lake? **County Road A**
- 32) What is the name of the creek that flows into Lions Lake? **Bradley Creek**
- 33) Lions Lake is located in what section? **Section 16**
- 34) At what elevation does the old railroad grade cross the creek? **1,130 feet above sea level**
- 35) What is the highest elevation in Section 16? **1,180 feet above sea level**

Tie breaker (Extra Credit)

36) Complete the chemical equation for the process of photosynthesis...

