

ENVIROTHON 2002

FORESTRY

1. Identify the trees marked A, B, C, D, and E by common name. (2 pts each)
2. Identify the trees marked A, B, C, D, and E by scientific name. (2 pts each)

| Tree | Common Name | Scientific Name |
|------|------------------------|----------------------------|
| A. | <u>Black Cherry</u> | <u>Prunus serotina</u> |
| B. | <u>Jack Pine</u> | <u>Pinus banksiana</u> |
| C. | <u>Swamp White Oak</u> | <u>Quercus macrocarpa</u> |
| D. | <u>Silver Maple</u> | <u>Acer saccharinum</u> |
| E. | <u>(Quaking) Aspen</u> | <u>Populus tremuloides</u> |

3. Name one product for which the trees marked A, B, and E are used. (1 pt each)

| Tree | Product |
|------|-----------------------|
| A. | <u>Furniture</u> |
| B. | <u>Pulp for paper</u> |
| E. | <u>Pulp for paper</u> |

4. Using trees marked A, B, C, D, and E determine the dominant and co-dominant trees. (2 pts)
 - a. Dominant B, C,
 - b. Co-dominant E
5. Using the clinometer and 100-foot tape, measure the total merchantable height of the tree marked **B** to the nearest 8-foot. (Merchantable is determined by a 4-inch top.) (2 pts) 32 ft. (4 sticks)
6. Estimate the dbh of trees marked A, B, and C within a 2-inch diameter class. (1 pt each)

| Tree | Dbh |
|------|---------------|
| A. | <u>6 CB</u> |
| B. | <u>12 PJ</u> |
| C. | <u>20 OSW</u> |

7. Dbh is defined as: diameter @ breast height (4.5 ft above ground) (1 pt)
8. Name the pines native to Wisconsin and the number of needles in a bundle

| Tree (2 pts) | # of Needles (1 pt) |
|-------------------|---------------------|
| <u>White Pine</u> | <u>5</u> |
| <u>Red Pine</u> | <u>2</u> |
| <u>Jack Pine</u> | <u>2</u> |

9. Thinning a mixed hardwood stand by removing all the trees greater than 15" dbh will improve the stand genetics and increase natural regeneration. (True or False) (1 pt) **False**

10. Explain the impact the thinning method in question 8 would have on the residual stand. (5 pts)

Removing all the large trees would leave small suppressed trees in the stand. Trees with better genetics would be removed. High risk, poor quality, and diseased/damaged trees would most likely be left in the stand. The seed source from the best and oldest trees would be lost.

!!TIE BREAKER QUESTION!!

11. Match the following tree species with the PRIMARY method of regenerating a stand. (1 pts each)

| # | REGENERATION METHOD | # | TREE SPECIES |
|---|----------------------------|---|------------------|
| 1 | Planting | 2 | Jack Pine |
| 2 | Clearcut w/ scarification | 3 | Aspen |
| 3 | Clearcut w/o scarification | 1 | Red Pine |
| 4 | Shelterwood or Seed Tree | 4 | Northern Red Oak |

12. If you see a large white moth flying in the fall, it is a gypsy moth (True or False) (1 pt) **FALSE**

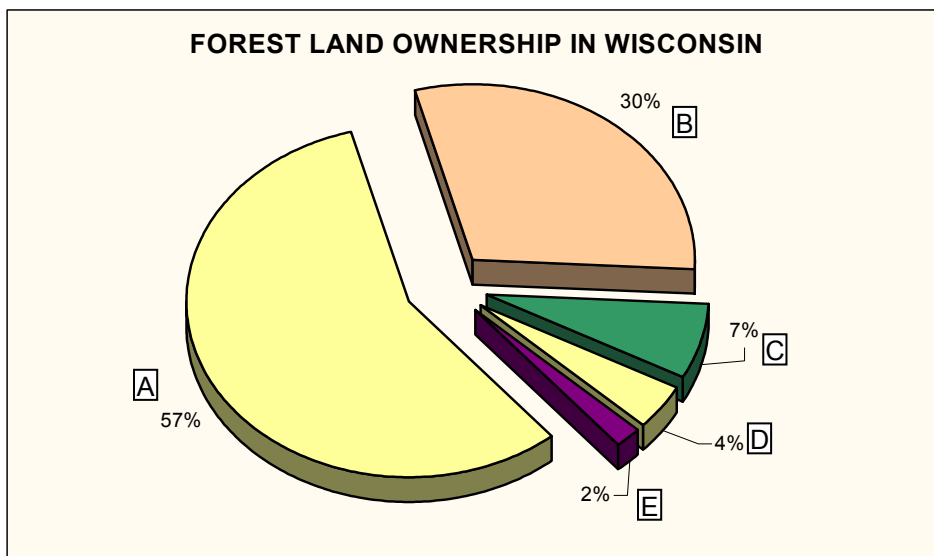
13. This element is a beneficial by-product of photosynthesis. (2 pt) **OXYGEN**

14. A cord of wood equals 128 cu. ft. (1 pt)

15. What is the apical meristem? Circle the correct answer. (1 pt)

- a. a dormant shoot
- b. an epicomic shoot
- c. **stem elongation tissue**

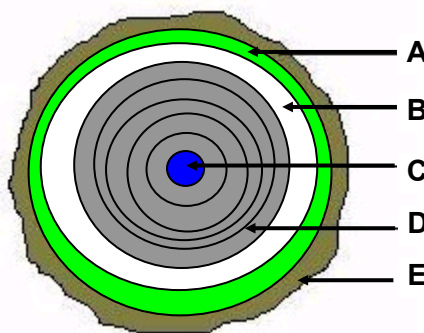
16. The chart below shows the current percentages of forestland ownership in Wisconsin. In the table below the chart, place the letter for each percentage next to the correct category of forestland ownership in Wisconsin. (1 pt each)



| Letter | Ownership |
|--------|-------------------------------|
| E | Native Americans |
| B | Public Lands |
| A | Private Landowners |
| C | Forest Industry Companies |
| D | Non-Forest Industry Companies |

17. In the table identify the parts of the tree using the chart below. (1 pt each)

| Letter | Term |
|--------------|--------|
| <u> A </u> | Phloem |
| <u> E </u> | Bark |
| <u> D </u> | Xylem |



18. Oak wilt is a serious problem in the state. (1 pt each)

- Name one way oak wilt is transmitted. **Overland carried by beetles/ Root grafting**
- What is the time period during which cutting of oak in oak wilt areas is restricted?
April 15-July 1 or later
- Which oak group is most susceptible to oak wilt? **Red Oak Group**

19. Reasons to leave trees along small streams and creek include: (circle all that apply) (1 pts)
- moderate water temperature fluctuations**
 - provide woody debris and leaf fall into water**
 - reduce runoff from adjacent fields**
 - provide erosion control**
20. What are the three macronutrients needed by trees? (3 pts) **N (Nitrogen), P (Phosphorus), and K (Potassium)**
21. Tree species which occupy areas first after disturbance are considered: (1 pt)
- invasive species
 - pioneer species**
 - exotics species
22. Examples of beneficial mutualism include: (2 pts) (2 or more correct = 2 pts)
- mistletoe
 - mychorrhizae**
 - lichens**
 - epiphytes**
23. The alternate host for white pine blister rust is (1 pt) **Ribes (wild gooseberry or wild current)**
24. What is best time of year to harvest a stand of trees with a high water table and why? (2 pts)
- Summer- water table is lowest or Winter- frozen conditions or Fall- dry season**
25. Match the tree species best suited to the site (only one site per species) (5 pts)

| # | SITE | # | TREE SPECIES |
|---|--|---|--------------|
| 1 | Floodplain | 2 | Jack Pine |
| 2 | Excessively drained sand | 6 | Sugar Maple |
| 3 | Well drained sand | 3 | Red Pine |
| 4 | Moderate to moderately well drained sand | 4 | White Pine |
| 5 | Poorly drained loam | 1 | Silver Maple |
| 6 | Rich mesic silt loam | 5 | Black Ash |

26. Pruning of pines can be done: (1 pt)
- Only in winter during the dormant season
 - Any time of year**
27. MBF stand for **one thousand** board feet. (1 pt)

28. Pruning of fruit trees is best done: (1 pt)
- Before the spring buds flower
 - After the fruit matures in the summer
 - Only in winter during the dormant season**
29. Name two ways to design a timber sale to keep it wildlife friendly (3 pts)
- Provide corridors, leave snags and den trees, avoid low areas where rutting can occur, create greater edge effect by feathering the sale boundary, etc.**
30. Which of the following are fire dependent or fire responsive species? (1 pt)
- Oak**
 - Jack Pine**
 - Red maple
 - Black ash
31. Name two federally endangered species, which are dependent on young jack pine stands? (2 pts)
- KARNER BLUE BUTTERFLY**
 - KIRTLAND'S WARBLER**
32. Determine which of the following trees is the fastest maturing. (1 pt.)
- jack pine**
 - white pine
 - tamarack
 - northern red oak
33. Determine which of the following trees lives the longest. (1 pt)
- jack pine
 - white pine**
 - tamarack
 - aspen
34. BMP's stands for: (1 pt)
- Better Management Policies
 - Best Management Practices**
 - Basic Mensuration Procedures

35. Conifers exhibit which of the following? (1 pt)
- a. **geotropism**
 - b. heliotropism
36. A northern hardwoods stand would most typically include: (1 pt)
- a. elm, silver maple, hackberry, and willow
 - b. **ash, beech, maple, and oak**
 - c. jack pine, oak, and aspen
 - d. cedar, hemlock, yellow birch, and ash
37. A sandy outwash plain stand would most typically include: (1 pt)
- a. elm, silver maple, hackberry, and willow
 - b. ash, beech, maple, and oak
 - c. **jack pine, oak, and aspen**
 - d. cedar, hemlock, yellow birch, and ash
38. A floodplain forest stand would most typically include: (1 pt)
- a. **elm, silver maple, hackberry, and willow**
 - b. ash, beech, maple, and oak
 - c. jack pine, oak, and aspen
 - d. cedar, hemlock, yellow birch, and ash
39. A selective harvest every 10-15 years would be appropriate silviculture for: (1 pt)
- a. a jack pine stand
 - b. **a northern hardwood stand**
 - c. an aspen stand
40. Non-commercial practices in a timber stand include: (Circle all that apply) (1 pt)
- a. Thinning
 - b. **TSI**
 - c. **Pruning**
41. Which one of the species below is being affected by a widespread canker in Wisconsin? (1 pt)
- a. Oak
 - b. Elm
 - c. **Butternut**