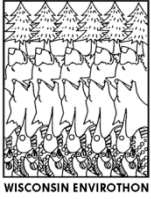


Team Code: _____



2009 Wisconsin Envirothon Forestry Exam

Provide the common name and Latin name of each tree using the picture of leaf, twig, and fruit and the leaf description.

1. Common Name: _____

Latin Name: _____

2. Common Name: _____

Latin Name: _____

3. Common Name: _____

Latin Name: _____

4. Common Name: _____

Latin Name: _____

5. Common Name: _____

Latin Name: _____

6. Common Name: _____

Latin Name: _____

7. Common Name: _____

Latin Name: _____

Team Code: _____

Matching Questions

Match the term on the left with the correct definition on the right.

- | | | |
|--------------------------|-------|---|
| 8. Ecosystem | _____ | a. An interacting system of living and non-living components of the environment. |
| 9. Ecotone | _____ | b. Areas where two plant communities meet and overlap. |
| 10. Forest Succession | _____ | c. Changes that occur in areas devoid of existing plant communities. |
| 11. Habitat | _____ | d. Distinct plant communities or stages within a successional pathway. |
| 12. Niche | _____ | e. Proceeds from a state where organisms are present but from which a community was removed. |
| 13. Primary Succession | _____ | f. Role that an organism plays in a natural system. |
| 14. Secondary Succession | _____ | g. The ability to withstand stress. |
| 15. Seral Stage | _____ | h. The orderly and progressive replacement of one community by another until a relatively stable community occupies the area. |
| 16. Tolerance | _____ | i. The place where an organism lives. |

17. Aspen, white oak and sugar maple each represent a different seral stage. Please identify the correct seral stage where each of these trees would normally be found.

- a. Pioneer stage: _____
- b. Intermediate stage: _____
- c. Climax stage: _____

18. What are the two major disturbances that typically reverse or setback the normal process of succession in the Lake States region?

- a. _____
- b. _____

19. Jack pine is an intolerant species. Why is it considered intolerant?

- a. _____
- b. _____

The following series of questions ask you to identify specific characteristics about the northern hardwood stand and pine plantation.

20. Identify which stand is made up of pioneer species and which is made up of late successional species.

- a. Northern Hardwood Stand: _____
- b. Pine Plantation: _____
- c. How do you know that? _____

21. Identify which stand is even-aged and which is uneven-aged.

- a. Northern Hardwood Stand: _____
- b. Pine Plantation: _____
- c. How do you know that? _____

22. Which stand, the northern hardwood or the pine plantation, has higher biological diversity?

a. _____

b. How do you know that? _____

23. Assume that global warming is a real and serious threat that will continue to cause increases in average global temperature...

a. How will this affect trees species currently found in Wisconsin? _____

b. How will this affect annual growth? _____

24. There are two common types of survey methods: Surveys using fixed radius plots and surveys using variable radius plots. What is the difference between the two survey methods?

25. Please define the terms cull and snag.

a. A snag tree is: _____

b. A cull tree is: _____

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

25. For each of the following trees
- Identify the correct species
 - Use the Biltmore stick to estimate the DBH (2" diameter class) of the designated trees.
 - Use the Diameter tape to measure the DBH (1" diameter class) of the designated trees.
 - Use the clinometer to measure the height of the designated trees.
 - Use the Merritt Hypsometer and 100' tape to estimate the number of merchantable 16 foot logs (to the nearest ½ log) in each tree.
 - Use the Biltmore stick to determine the volume of the designated tree.

Tree	Species	DBH Biltmore stick	DBH D-tape	Total Height	Merchantable logs (1/2 log)	Volume
1						
2						
3						

26. Using the 10 Basal Area Factor prism, what is the Basal Area of the pine plantation? (Plot center is identified).

Basal area: _____

27. The average diameter for trees in this stand is 12 inches. Using the red pine stocking chart provided, is the pine plantation under-stocked, adequately stocked, or overstocked?

28. Assume that these trees are growing at the rate of one inch in diameter every four years. Using the red pine stocking chart provided, when should the next harvest occur?

29. Using the red pine stocking chart provided, how many trees per acre should be harvested?

30. You can determine the age of trees in the pine plantation using two different methods. What are they?

a. _____

b. _____

31. Using the provided site index chart, tree core, and the height measurement you took earlier, what is the site index of the pine plantation?

Site Index: _____

32. What are three conventional forest products that can be harvested from these stands?

a. _____

b. _____

c. _____

33. What are two non-timber forest products that can be harvested from these stands?

a. _____

b. _____

TIE BREAKER

Define the Competitive Exclusion Principle and provide an example using the northern hardwood stand.

_____/12

Running Total: 100