

## 2024 Area Envirothon : Forestry

1. Approximately what percentage of Ohio is forested today?
  - A. 10%
  - B. 30%
  - C. 40%
  - D. 70%
  
2. Best Management Practices (BMPs) in forestry involve the reduction or elimination of soil erosion during silvicultural operations. These include:
  - A. Taking the most direct route from the log landing to the harvesting site to minimize soil disturbance.
  - B. Using pole-sized trees to create a bridge across large, intermittent streams.
  - C. Not using bumper trees to minimize damage to the residual stand.
  - D. Using natural breaks in the contour to control the movement of water.
  
3. Using the chart below, determine how many water bars need to be installed for a 520-foot stretch of skid road with a 25% grade.
  - A. 13
  - B. 9
  - C. 20
  - D. 15

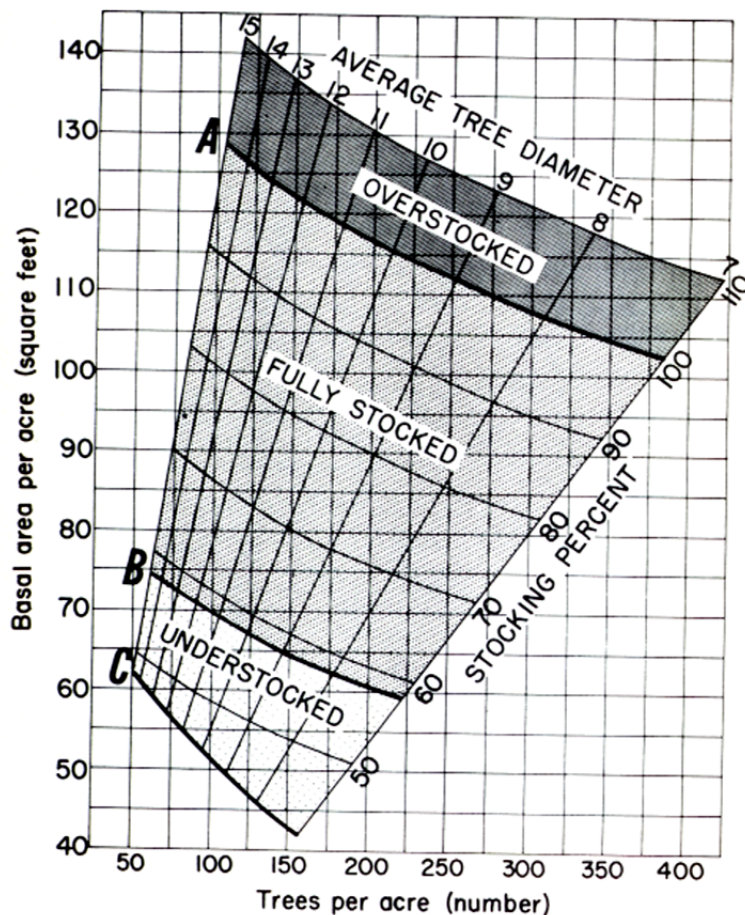
Slope	Distance between water bars
2 %	250 ft.
5 %	135 ft.
10 %	80 ft.
15 %	60 ft.
20 %	45 ft.
25 %	40 ft.
30 %	35 ft.

4. Trees can have opposite or alternate branching patterns. Which of the following trees have opposite branching?
  - A. Maple, sassafras, blackgum, dogwood
  - B. Ash, oak, sycamore, ailanthus
  - C. Dogwood, ash, maple, buckeye
  - D. Walnut, sycamore, buckeye, American beech

5. Forested areas along streams and rivers lower water temperature, provide unique habitat for both aquatic and terrestrial plants and animals, and help improve water quality by trapping pollutants before they can enter the water. What are these forested areas called?
- A. Aquatic forests
  - B. Hydric forests
  - C. Riparian forests
  - D. Streamside management zones
6. Wildfires in Ohio are predominantly caused by:
- A. Lightning
  - B. Unattended campfires
  - C. Burning of yard waste
  - D. Cigarettes
7. Which is an example of even-aged forest management?
- A. Group selection
  - B. Single-tree selection
  - C. Clearcut
  - D. Diameter limit harvest
8. Which of the following tree species is the most shade-tolerant?
- A. Yellow poplar (*Liriodendron tulipifera*)
  - B. American beech (*Fagus grandifolia*)
  - C. Black walnut (*Juglans nigra*)
  - D. Chestnut oak (*Quercus montana*)
9. You are in the field with a landowner when they ask you how big the large sycamore tree that's growing on their property is. You forgot your diameter tape at the office, but you have some flagging and a linear tape measure. After wrapping the flagging around the sycamore at DBH, you use the tape measure and determine the flagging is 120 linear inches long. You know that a diameter tape uses the constant  $\pi$  to convert circumference to diameter. How many diameter inches is the sycamore?
- A. 60 diameter inches
  - B. 38 diameter inches
  - C. 42 diameter inches
  - D. 28 diameter inches
10. As the living tissues within a tree die, they aren't shed the way that humans shed skin cells. Instead, they become part of the tree protecting it or supporting it. When the phloem dies, it becomes?
- A. Bark
  - B. Sapwood
  - C. Roots
  - D. Heartwood

11. Use the Upland Central Hardwood Stocking Guide provided below for the following question. A landowner asks you to determine if their 30-acre hardwood stand would benefit from a thinning. Trees in this stand, on average, are 9 inches in diameter (DBH). The basal area is 110 square feet per acre. What is the stand's stocking level and approximately how many trees per acre are present?

- A. The stand is fully stocked with approximately 250 trees per acre.  
 B. The stand is overstocked with approximately 275 trees per acre.  
 C. The stand is fully stocked with approximately 125 trees per acre.  
 D. The stand is understocked with approximately 115 trees per acre.



12. In recent years, wildfires have been increasing in size and severity, threatening human life and development and wildlife habitat. A tool that forest and fire managers use to reduce the risk of unplanned fires is prescribed fires. Fighting fire with fire has many benefits. Prescribed fires can do all of the following EXCEPT:
- A. Improve wildlife habitat  
 B. Promote the growth of trees, wildflowers, and other plants  
 C. Eliminate the risk of wildfires in the area  
 D. Recycle nutrients back into the soil

13. Carbon dioxide is the main greenhouse gas emitted by humans. Forests as a whole store much more carbon than they produce. This carbon storage helps offset some of the United States' greenhouse gas emissions. In an individual forest tree, carbon storage occurs in:

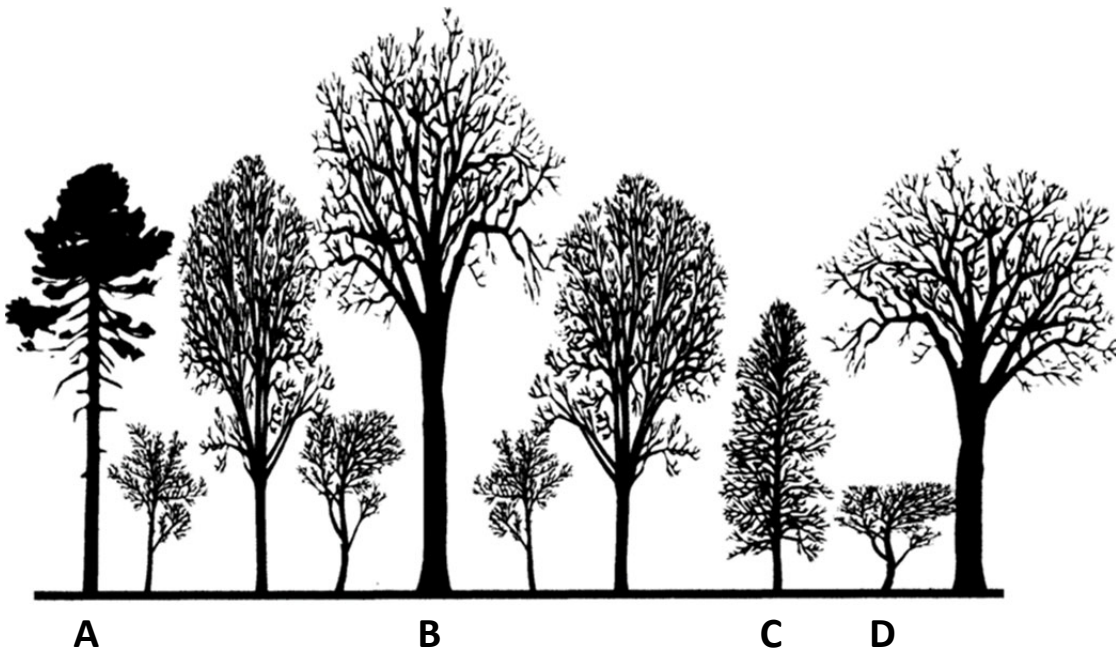
- A. Foliage, seeds, bark, stumps, trunks
- B. Mycelia, branches, trunk, foliage, bark
- C. Xylem, stump, soil, foliage, roots
- D. Roots, cambium, stems, branches, mycelia

14. One acre is 43560 square feet. The recommended spacing when planting seedlings for timber production is between 8-12 feet. If you're planning a 7.2-acre hardwood tree planting with 10 ft x 10 ft spacing, approximately how many seedlings will you need?

- A. 3,874
- B. 2,592
- C. 3,139
- D. 3,485

15. In the image below, the trees labeled A and D are:

- A. Dominant (A) and Intermediate (D)
- B. Co-dominant (A) and Suppressed (D)
- C. Co-Dominant (A) and Intermediate (D)
- D. Dominant (A) and Suppressed (D)



## Site questions

16. Tree #1 grows naturally in bottomlands, has a seed that is eaten by some songbirds and usually makes a good home for woodpeckers and raccoons. What is tree #1?
- A. Basswood
  - B. Sycamore
  - C. Willow
  - D. Cottonwood
17. Foresters need to know the diameter of a tree and the height in order to estimate the volume that is in the tree. One of the tools used to measure diameter is called a Biltmore stick or a tree scale stick. In order to achieve an accurate, consistent measurement the tree is measured at a point on the trunk called diameter breast height. Where is that point on a tree?
- A. 3.25 feet off the ground
  - B. 4.25 feet off the ground
  - C. 4.5 feet off the ground
  - D. 5.5 feet off the ground
18. Using the tree scale stick what is the diameter of tree #1?
- A. 24 inches
  - B. 18 inches
  - C. 22 inches
  - D. 26 inches
19. Plant #2 is an understory plant in this woodland. It is one of the first shrubs to leaf out in the spring and has a fruit that is considered junk food for wildlife. It routinely competes with the trees for food and water. What is plant #2?
- A. Autumn olive
  - B. Viburnum
  - C. Dogwood
  - D. Honeysuckle
20. Tree #3 is a valuable timber species and is usually the last tree to leaf out in the spring. It has a large nut that is excellent food for wildlife. Identify tree #3.
- A. Sycamore
  - B. Bur oak
  - C. Black walnut
  - D. Mulberry
21. Using the tree scale stick provided what is the diameter of tree #3?
- A. 17
  - B. 20
  - C. 24
  - D. 23

22. When identifying trees, the way the leaves are arranged on the twig and the branching pattern of the tree is a first step. Look at tree #4 and determine which branching pattern this tree has.
- A. Opposite
  - B. Alternate
  - C. Whorled
23. Based on the branching pattern determined in question #7 which group of trees is it most likely tree #4 belongs to?
- A. Maples
  - B. Ash
  - C. Catalpa
  - D. Oaks

**Picture is on the table**

24. Considering the picture on the table, how does the loss of trees from the landscape affect a stream's source of water?

- A. Decrease surface runoff and decrease baseflow.
- B. Decrease surface runoff and increase baseflow.
- C. Increase surface runoff and decrease interflow.
- D. Increase surface runoff and increase interflow.

25. Considering the picture on the table, how would a loss of forests and wetlands influence flood events?

- A. Increase intensity or "flashiness" and decrease problems associated with non-point source pollution.
- B. Increase intensity or "flashiness" and increase problems associated with non-point source pollution.
- C. Decrease intensity or "flashiness" and decrease problems associated with non-point source pollution.
- D. Decrease intensity or "flashiness" and increase problems associated with non-point source pollution.

**Written by**

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