

## Indiana 4-H/FFA Forestry Senior Division

### True/False

1. Livestock grazing in woodlots is not a significant problem in Indiana.  
True  
**False**
  
2. The "figure" in a wood generally refers to the distinct markings on the face of a wood sample.  
**True**  
False
  
3. Photosynthesis is the process in the leaf cells that uses light, carbon dioxide and water to produce simple sugars.  
**True**  
False
  
4. The Tuliptree has perfect flowers (both male and female parts).  
**True**  
False
  
5. Most of Indiana's forest land is found in the Hoosier National Forest  
True  
**False**
  
6. If seedlings cannot be planted within a few days, they should be "heeled in" in a cool shady location.  
**True**  
False
  
7. Female flowers are also called pistilate flowers.  
**True**  
False
  
8. Red Cedar seeds are scattered mostly by water.  
True  
**False**
  
9. Cottonwood, willow and maple seeds are scattered mostly by wind.  
**True**  
False
  
10. Red and black oaks are the top ranked hardwood species used by Indiana sawmills.  
**True**  
False

11. Osage-orange is used in the manufacture of archery bows.

**True**

False

12. Habitat is the sum of all conditions that a species needs to survive and usually includes food, water, shelter and space.

**True**

False

13. The soft maples have scaly red, blunt buds; the buds of the hard maples are brown and pointed.

**True**

False

14. Pines are seldom used to reclaim eroded soils.

True

**False**

15. A cord is a pile of wood, bark and air spaces 4 feet high, 4 feet wide and 8 feet long.

**True**

False

16. Firewood should be stored away from the sides of buildings to increase drying rate and decrease the chance of insect infestation in the building's wooden structure.

**True**

False

17. Intolerant species are those which prefer to grow in the shade of other trees

True

**False**

18. Timber stand improvement (TSI) is designed to improve species composition, growth and quality of crop trees in an immature stand.

**True**

False

19. A stand table shows the volume per acre by species and DBH classes, while a stock table shows the number of trees per acre by species and DBH class.

True

**False**

20. Slope measures the angle of an area relative to the horizontal.

**True**

False

21. Ash and maple seeds are distributed mainly by water.

True

**False**

22. Black Walnut has dark brown, chambered pith.

True

**False**

23. Honeylocust is the only tree with doubly compound leaves found in Indiana

True

**False**

24. Osage-orange is used extensively in the manufacture of paper.

True

**False**

25. Both sugar maple and Boxelder produce their seeds in the fall.

**True**

False

26. Most of Indiana's forestlands are owned by state or federal governments.

True

**False**

27. Oak regeneration is often hampered on good sites by competition from other species.

**True**

False

28. American beech and sugar maple are examples of intolerant species.

True

**False**

29. Tree species normally grow to heights greater than 20 feet.

**True**

False

30. Black cherry can be dangerous to livestock.

**True**

False

31. Nearly 4,000,000 acres of forest land are found in Indiana.

**True**

False

32. Stem decay fungi are responsible for almost 80% of the disease losses in standing hardwoods.

**True**

False

33. A standard cord of wood occupies 128 cubic feet.

**True**

False

34. The goal of best management practice approach (BMP) is to avoid soil erosion and water pollution.

**True**

False

35. Basal area is the total diameter of all trees at ground level in a sample area.

True

**False**

36. Foliage height diversity refers to the number of layers of vegetation in a particular area.

**True**

False

37. Jack Pine, Red Pine and Black Walnut are well-suited for planting on coarse sands and gravelly soils.

True

**False**

38. Male flowers are called pistilate flowers.

True

**False**

39. Wildlife can benefit forests by eating insects and burying tree seeds.

**True**

False

40. Soft maple seeds ripen in the fall and hard maple seeds ripen in the spring.

True

**False**

41. The top three hardwood species used in Indiana sawmills are red oaks, black oaks, and black cherry

True

**False**

42. Hickory is used as fuel for meat smoking.

**True**

False

43. Slippery Elm has very rough leaves and gray twigs, American Elm has slightly rough leaves and brown twigs.

**True**

False

44. Conservation means to keep something to enjoy and study.

True

**False**

45. Preservation means use of non-renewable minerals and harvesting

True

**False**

46. Sweet Gum is often found growing with Pin Oak in the low, wet woods of Southern Indiana.

**True**

False

47. Acorns are a kind of mast.

**True**

False

48. Both male and female flowers are born on the same tree in the case of pines, hickories and walnuts.

**True**

False

49. Tree plantings for erosion control are usually five to six feet apart.

**True**

False

50. Salvage cuttings are made to remove trees killed or damaged by insects, disease, wind, fire or other injurious agencies.

**True**

False

51. Diplodia Tip Blight is an important disease in pines, especially Austrian pine.

**True**

False

52. Farmers own approximately 70% of forested land in Indiana.

**True**

False

53. Most forested land in Indiana is found in the southern half of the state.

**True**

False

54. Wildlife feed on the fruits of trees such as flowering dogwood and persimmon during the winter.

**True**

False

55. Wildlife feed on the fruits of trees such as red mulberry and black cherry during the winter

True

**False**

56. Most forest fires in Indiana are caused by lightning strikes

True

**False**

57. The cambium is a thin, green layer just inside the inner bark.

**True**

False

58. Black Walnut leaves are compound.

**True**

False

59. Livestock should be left to roam the forests to fertilize the soils.

True

**False**

60. Bark is considered the "armor" of a tree.

**True**

False

61. Willow wood is heavy, hard and strong with a high shock resistance and is typically used for flooring.

True

**False**

62. White Ash is commonly used to make ball bats, handles, oars and hockey sticks.

**True**

False

63. The seeds of elms, soft maples, willows and cottonwood ripen mostly in August.

**False**

True

64. Tulip tree and Boxelder seeds are scattered mostly by the wind.

**True**

False

65. Perfect flowers are those that have both male and female parts.

**True**  
False

66. Outbreaks of insect damage are more common in mixed species stands than pure stands of one tree species.

**False**  
True

67. Tree volumes can be estimated using the DBH and number of 12-foot lots.

**True**  
False

68. Black Cherry and Red Mulberry seeds are scattered mostly by animals.

**True**  
False

69. More mills in Indiana use Northern Red Oak and Black oak than Black Walnut

**True**  
False

70. Tuliptrees and hard maples are the top ranked hardwood species used by Indiana sawmills.

**False**  
True

71. American Basswood is better than White Ash for making baseball bats.

True  
**False**

72. Black Cherry is used for furniture, paneling, caskets, and veneer.

**True**  
False

73. Osage-orange is used in the manufacture of archery bows

**True**  
False

74. Cottonwood is often used for face veneer paneling and bowling pins.

True  
**False**

75. Osage-orange wood is used for fence posts and archery bows.

**True**  
False

76. Willow wood is heavy and hard and is used for flooring.

True

**False**

77. Male flowers are also called staminate flowers.

**True**

False

78. Pines mature in 6 years.

True

**False**

79. Tree flowers that get pollinated never develop seeds.

True

**False**

80. Cottonwood, willow and maple seeds are scattered mostly by animals.

True

**False**

81. Basal Area is the area in square feet of the cross section of a tree stem a DBH.

**True**

False

82. Branch pruning is a cutting that removes lateral branches from crop trees to improve the value of one or more logs

**True**

False

83. Canopy is the cover of branches and foliage formed by the crowns of trees.

**True**

False

84. Aerial photographs are useful for making timber inventory maps.

**True**

False

85. Ohio buckeye has compound leaves with five leaflets.

**True**

False

86. Upper leaf surfaces of Slippery Elm are rougher than those of American Elm leaves.

**True**

False

87. Black Tupelo (Blackgum) fruits look like spiny balls.

True

**False**

88. Shagbark Hickory leaves usually have seven leaflets.

True

**False**

89. Boxelder leaves are arranged opposite to one another.

**True**

False

90. Eastern Cottonwood and Quaking Aspen leaf stems are long compared to the leaf stems of River Birch.

**True**

False

91. Both Black Oak and Northern Red Oak have bristle-tipped leaves.

**True**

False

92. Sassafras, Red Mulberry, and Boxelder have oppositely arranged leaves.

True

**False**

93. Sugar Maple leaves have rounded leaf crotches.

**True**

False

94. Both Black Locust and Honeylocust have doubly compound leaves.

**False**

True

95. Silver maple is one of the so-called "soft maples."

**True**

False

96. Bur Oaks have acorns with a hairy fringe on the cap.

**True**

False

97. Sycamore, Tuliptree, and black willow have leaf clasps at the base of the leaf stem.

**True**

False

98. Typical logging crew consists of at least one tree feller and one skidder operator.

**True**

False

99. White oaks produce a reliable crop of acorns which is an important food source for birds and mammals.

True

**False**

100. Leaving dead trees or snags enhances the habitat of cavity nesting birds.

**True**

False

101. Thinning is the removal of trees in an overstocked woods.

**True**

False

102. Scotts Pine and Eastern White Pine are the most common Christmas trees grown in Indiana

**True**

False

103. Shearing is the least important cultural activity involved in producing a high quality Christmas tree.

True

**False**

104. Livestock can be grazed successfully without harm to Christmas tree plantations

True

**False**

105. April and May are generally the best months to plant bare-root walnut seedlings so they can establish a root system before the following winter.

**True**

False

106. Recommended spacing for walnut plantations is 12 x 12 feet

**True**

False

107. About 67% of Indiana's forested land is owned by coal companies, water companies, sawmill companies and other private owners, while farmers own about 22%.

True

**False**

108. Most of Indiana's forest land is found on private land.

**True**

False

109. Scotch pines are the most commonly grown Christmas trees in Indiana.

**True**

False

110. Plants should be heeled in if it is going to be a week or longer till planting.

**True**

False

111. Evergreen windbreaks increase home heating costs.

True

**False**

112. Evergreen windbreaks provide winter cover for quail, pheasant, and songbirds.

**True**

False

113. Windbreaks stop 25 - 50% of the winter wind?

True

**False**

114. The ultimate goal of the tree measuring stick is to estimate the number of board feet of lumber in a tree

**True**

False

115. The Doyle rule is the most commonly used volume scale for timber in Indiana.

**True**

False

116. Trees with over 75% defective are considered cull.

True

**False**

117. Diffuse porous woods include oaks, elms and ash.

True

**False**

118. Wood rays serve to transport substance laterally through the tree

**True**

False

119. A given volume of a hardwood, such as cottonwood, will produce more heat than a light wood, such as hickory.

True

**False**

120. A standard cord of wood measures 4 x 4 x 8 feet while a rick has a variable width.

**True**

False

121. Freshly cut wood is .43 pounds water and .57 pounds dry wood.

**True**

False

122. Erosion after timber harvest can be decreased by seeding of grasses on bare soils.

**True**

False

123. Sedimentation caused by silvicultural activities can carry nutrients and pesticides into streams and reservoirs.

**True**

False

124. Shelterwood cutting is the slow removal of an entire wood.

**True**

False

125. Trees are best planted in the spring.

**True**

False

126. Fall is the best time to plant bare root trees and shrubs

True

**False**

## Multiple Choice

1. The following has/have doubly compound leaves:
  - a. Red Mulberry
  - b. Coffee-Tree**
  - c. Black Walnut
  - d. B and C
  - e. A and B
2. DBH is measured:
  - a. 4 feet above ground
  - b. 3.5 feet above ground
  - c. 4.5 feet above ground**
  - d. 5 feet above ground
  - e. None of the above
3. When using the Doyle Log Rule, what is the minimum diameter that is considered for volume estimates?
  - a. 16 inches
  - b. 12 inches
  - c. 10 inches
  - d. 8 inches**
  - e. 6 inches
4. Which species fruit does not belong in the following group?
  - a. Persimmon**
  - b. Redbud
  - c. Honey Locust
  - d. Coffee-Tree
  - e. Black Locust
5. The tree species best suited for planting in severely eroded places in southern Indiana is:
  - a. Black Walnut
  - b. Black Locust
  - c. Virginia Pine**
  - d. Red Pine
  - e. Norway Spruce
6. Bristle-tipped leaves are found on:
  - a. Pin Oak
  - b. Black Oak
  - c. Red Oak
  - d. Shingle Oak
  - e. All of the above**

7. Aspect is:
- a. a measure of slope angle
  - b. the direction toward which a slope faces
  - c. an indicator of the amount of sunlight an area receives
  - d. B and C**
  - e. None of the above
8. Parenchyma are:
- a. plant cells which store food**
  - b. animal cells which store food
  - c. leaf clasps
  - d. guard hairs on animal pelts
  - e. None of the above
9. The best fuel wood among those listed below is:
- a. Catalpa
  - b. Sycamore
  - c. Hackberry
  - d. White Oak**
  - e. Sassafras
10. What is most dangerous in burning scrap lumber for firewood?
- a. poisonous wood preservatives**
  - b. nails in wood
  - c. insect infestation
  - d. pieces are too large
  - e. None of the above
11. Wood ash can be used as a lawn and garden fertilizer. Which of the following elements is most abundant in wood ash?
- a. Nitrogen
  - b. Phosphorus
  - c. Iron
  - d. Potassium**
  - e. Magnesium
12. The gradual reduction in tree diameter from the stump to the top log is called:
- a. gradation
  - b. slant
  - c. taper**
  - d. cull
  - e. defect

13. Which of the following species is most suitable for plantings in muck and prairie soils?
- a. Tuliptree
  - b. Shrub willows**
  - c. Autumn olive
  - d. Austrian Pine
  - e. B and D
14. Which of the following terms best describes a hardwood tree which is 1 to 5 inches diameter at DBH?
- a. small saw timber
  - b. fledgling
  - c. pole timber
  - d. sapling**
  - e. cull
15. Insect outbreaks are likely in:
- a. pure stands of one tree species
  - b. even-age plantations
  - c. spring and summer
  - d. stands weakened by wind
  - e. all of the above**
16. Which of the following insects damage tree roots directly?
- a. pine weevils
  - b. tent caterpillars
  - c. bagworms
  - d. white grubs (June beetle larvae)**
  - e. inden loopers
17. Height of dominant trees at 50 years of age is used to calculate:
- a. suppression
  - b. silviculture
  - c. rotation
  - d. site index**
  - e. niche
18. Which of the following is desirable for a good field notebook or journal?
- a. writer's name
  - b. date
  - c. location
  - d. B and C
  - e. all of the above**

19. Alternate leaf arrangement is a characteristic of:
- a. maples
  - b. ashes
  - c. dogwoods
  - d. oaks**
  - e. red pine
20. Oaks, hickories, maples, and beeches are all:
- a. hardwoods
  - b. mast producers
  - c. alternate leaves
  - d. A and B**
  - e. B and C
21. Which species does not belong in the following group?
- a. Quaking Aspen
  - b. Eastern Cottonwood
  - c. Swamp Cottonwood
  - d. Tulip-poplar**
  - e. Bigtooth Aspen
22. Indiana's most valuable hardwood species (per board foot) is:
- a. Mockernut Hickory
  - b. White Oak
  - c. Black Walnut**
  - d. Black Cherry
  - e. Yellow-poplar
23. Palmately compound leaves are found on:
- a. Shagbark Hickory
  - b. Ohio Buckeye**
  - c. Butternut
  - d. Boxelder
  - e. White Ash
24. A board foot is:
- a. 1" x 12" x 12"
  - b. 2" x 4" x 18"
  - c. 1" x 6" x 24"
  - d. 144 cubic inches
  - e. All of the above**

25. The best fuel wood among those listed is:
- a. White Pine
  - b. Pignut Hickory**
  - c. Quaking Aspen
  - d. American Basswood
  - e. Eastern Cottonwood
26. The tree part that captures energy from the sun is:
- a. cambium
  - b. photosynthesis
  - c. leaves**
  - d. xylem
  - e. heterphagous sclera
27. Trees with distinctly variable leaf shapes include:
- a. Sassafras
  - b. Red Mulberry
  - c. Boxelder
  - d. A and B**
  - e. All of the above
28. All trees that shed their leaves each fall are:
- a. hardwoods
  - b. broad-leaves
  - c. colored by frost
  - d. all the above**
  - e. none of the above
29. Even-age management is:
- a. based on selecting single trees to harvest
  - b. used to establish intolerant species
  - c. not really useful in Indiana hardwood management
  - d. B and C**
  - e. all of the above
30. Forest insect pests can be controlled by:
- a. chemical insecticides
  - b. insect parasites
  - c. insect diseases
  - d. mechanical controls
  - e. all of the above**

31. Infectious leaf diseases:
- a. seldom cause tree death
  - b. may be caused by fungi
  - c. may be caused by bacteria
  - d. may be viral
  - e. all of the above**
32. Trees that emerge from the majority of the forest canopy belong to the \_\_\_\_\_ crown class.
- a. intermediate
  - b. dominant
  - c. co-dominant
  - d. B and C**
  - e. all of the above
33. An organism's "job" in the community is its:
- a. site index
  - b. tolerance
  - c. habitat
  - d. niche**
  - e. trophic level
34. The state tree of Indiana is:
- a. Northern Cardinal
  - b. Red Mulberry
  - c. Peony
  - d. Northern Red Oak
  - e. Tuliptree**
35. Which of the following has winged seeds?
- a. Honeylocust
  - b. Ohio Buckeye
  - c. Tuliptree**
  - d. Black Oak
  - e. Kentucky Coffeetree
36. Which of the following needles are four to six inches long?
- a. White Pine
  - b. Red Pine**
  - c. Scotch Pine
  - d. Jack Pine
  - e. Virginia Pine

37. Which species does not belong in the following group based on leaf arrangement?

- a. Silver Maple**
- b. Black Willow
- c. Black Walnut
- d. Butternut
- e. Black Oak

38. Which of the following trees has a different fruit type from the others?

- a. Black Locust
- b. Kentucky Coffeetree
- c. Eastern Redbud
- d. Honeylocust
- e. Black Cherry**

39. Two methods used to reproduce even-aged stands are:

- a. clear cutting and branch pruning
- b. clear cutting and shelter wood**
- c. selection and shelter wood
- d. selection and branch pruning
- e. branch pruning and shelter wood

40. Which of the following is not very important for a "Notice of Timber Sale?"

- a. legal description of where timber is located
- b. deadline for receipt of bids
- c. history of timber stand improvement practices**
- d. minimum property damage insurance carried by purchaser
- e. estimated volume of timber in trees marked for harvest

41. The Doyle Log Rule gives estimates of timber volume in board feet using:

- a. log length and species
- b. log length and DBH
- c. species and DBH
- d. DBH and small inside bark diameter
- e. log length and small inside bark diameter**

42. Which of the following is also known as Mockernut Hickory?

- a. Shagbark Hickory
- b. White Hickory**
- c. Bitternut Hickory
- d. Pignut Hickory
- e. None of the above

43. Which of the following does not have winged seeds?
- a. White Ash
  - b. Boxelder
  - c. Ohio Buckeye**
  - d. Sugar Maple
  - e. Silver Maple
44. Which of the following is best suited to fertile, limestone-derived soils?
- a. Norway Spruce
  - b. Black Locust
  - c. Black Walnut**
  - d. Jack Pine
  - e. Tuliptree
45. Which of the following has spiny cones?
- a. Red Pine
  - b. White Pine
  - c. Scotch Pine
  - d. Jack Pine
  - e. Virginia Pine**
46. Which species does not belong in the following group based on leaf arrangement?
- a. Boxelder**
  - b. Black Walnut
  - c. Honey Locust
  - d. Black Locust
  - c. Shingle Oak
47. Which of the following trees often grows in wet or poorly drained soils?
- a. Pin Oak**
  - b. Chestnut Oak
  - c. White Hickory
  - d. Pignut Hickory
  - e. None of the above
48. Which of the following trees has ring-porous wood?
- a. Sycamore
  - b. Tuliptree
  - c. Sugar Maple
  - d. Beech
  - e. Northern Red Oak**

49. Which of the following is a relatively heavy wood in terms of weight per volume?
- a. Butternut
  - b. Dogwood**
  - c. Boxelder
  - d. Basswood
  - e. Willow
50. Wood ash can be used as a lawn and garden fertilizer. Which of the following statements is false? Wood ash. . .
- a. contains mostly calcium.
  - b. contains about 5 - 15% nitrogen.**
  - c. can be used to maintain soil pH of 6 to 7, especially on acidic soils.
  - d. contains more potassium than phosphorus.
  - e. is usually white, gray or black in color.
51. Which of the following can minimize insect damage to trees?
- a. remove infested slash
  - b. change tree species composition
  - c. allow insect-damaged trees to die in place
  - d. A and B**
  - e. A and C
52. Which of the following insects damage conifers?
- a. Locust leaf miners
  - b. Tent caterpillars
  - c. Carpenter worms
  - d. Colombian timber beetles
  - e. Bagworm**
53. Non-infectious diseases of trees can be caused by all the following except:
- a. mechanical injuries
  - b. sudden change in temperature
  - c. air pollution
  - d. anthracnose**
  - e. water pollution
54. Which of the following is not used commonly for pulpwood?
- a. Black Walnut**
  - b. Tuliptree
  - c. Sycamore
  - d. Largetooth Aspen
  - e. Black Tupelo

55. Which of the following should not be planted on dry, somewhat eroded soils?  
**a. White Pine**  
b. Jack Pine  
c. Scots Pine  
d. Red Pine  
e. Eastern Redcedar
56. Which of the following is not an example of a primary wood-using industry?  
a. lumber  
b. veneer  
**c. cabinet-making**  
d. cooperage  
e. paper
57. Which of the following woods is not hard, heavy, and strong?  
a. Eastern Redcedar  
b. Hard Maple  
**c. Tuliptree**  
d. White Ash  
e. Honeylocust
58. Which of the following is an insect which damages tree stems directly?  
a. anthracnose  
b. tent caterpillars  
c. Verticillium wilt  
d. Diplodia Tip Blight  
**e. Carpenter worms**
59. Which of the following trees needs to be planted in deep, fertile, well-drained soils?  
**a. Black Walnut**  
b. Scotch Pine  
c. Virginia Pine  
e. Norway Spruce
60. Which is not of the Red Oak family?  
a. Black oak  
b. Pin oak  
**c. Bur oak**  
d. Shingle oak
61. Which one of the following trees have fruits scattered mostly by wind?  
a. Black Locust  
b. Northern Red Oak  
**c. Yellow-poplar or Tuliptree**  
d. Osage-orange  
e. Black Cherry

62. Which one species does not belong in the following group based on seed dispersal mechanisms?

- a. Persimmon
- b. Red Maple
- c. White Ash
- d. Boxelder
- e. Cottonwood

63. Which one species does not belong in the following group based on seed dispersal mechanisms?

- a. Persimmon
- b. Dogwood
- c. Black Cherry
- d. Black Walnut
- e. Cottonwood

64. Which of the following is an insect which damages foliage?

- a. Tent caterpillar
- b. Locust borer
- c. Verticillium wilt
- d. Diplodia Tip Blight
- e. Carpenter worm

65. Which tree has perfect flowers?

- a. Black locust
- b. Walnut
- c. Basswood
- d. A & C

66. Basal area per acre is:

- a. a measure of the bare ground between trees
- b. the area in square feet of the cross section of tree stems at ground level
- c. the area in square feet of the cross section of tree stems at DBH
- d. percent crown cover
- e. None of the above

67. Which of the following is desirable for a woodland management plan?

- a. history of past management
- b. management objectives
- c. maps
- d. B and C
- e. All of the above

68. "A group of trees having similar characteristics which will allow for treatment as a single unit in a management plan":
- a. understory
  - b. saw timber
  - c. rotation
  - d. forest stand**
  - e. overstory
69. In Indiana we use this formula  $v = (D-4)^2$  to decide the volume in board-feet of a log is called?
- a. Volume of a tree
  - b. Doyle Log Rule**
  - c. Tree measuring stick
  - d. Indiana's Rule
70. What tool is used to estimate board-feet in standing timber?
- a. Chainsaw
  - b. Clinometer
  - c. Tree calipers
  - d. Tree measuring stick**
  - e. Brunton compass
71. The following has opposite leaves:
- A. Red Mulberry
  - B. Persimmon
  - C. Boxelder**
  - D. Sassafras
  - E. A and B
72. The following oak leaves are bristle-tipped:
- A. Black
  - B. Swamp white oak
  - C. Pin
  - D. All of the above
  - E. A and C**
73. Which of the following does not have compound leaves?
- A. Honeylocust
  - B. Mockernut Hickory
  - C. Black Walnut
  - D. Boxelder
  - E. Sycamore**

74. The following has/have toothed margins:

- A. Red Mulberry
- B. American elm
- C. Black gum
- D. Sassafras
- E. A and B**

75. Which of the following trees have two leaves per cluster?

- A. White Pine
- B. Red Pine
- C. Scotch Pine
- D. B and C**
- E. A and C

76. Which of the following oaks does not have bristle-tipped leaves?

- A. Pin Oak
- B. Black Oak
- C. Red Oak
- D. Shingle Oak
- E. Bur Oak**

77. Which months are generally best for planting Black Walnut trees?

- A. December - February
- B. March, April, May**
- C. June, July
- D. August, September
- E. October, November

78. pH level for walnuts should be?

- A. 6.5 to 7.2**
- B. 7.2 to 8.5
- C. 5.2 to 6.5
- D. None

79. Stanley Coulter, one of the early conservationists of the state, reported in that approximately \_\_\_\_\_ percent of Indiana was covered by hardwood forests before settlement by Europeans:

- A. 10
- B. 30
- C. 55
- D. 87**

80. Today, approximately \_\_\_\_\_ percent of Indiana is covered by hardwood forests:
- A. 10
  - B. 20**
  - C. 30
  - D. 40
  - E. 50
81. Pines are used for:
- A. Stopping erosion
  - B. planting on worn out land
  - C. Wind breaks
  - D. A, B, and C**
82. Hardwood seedlings that are shipped after one year in the seed bed are called \_\_\_\_\_:
- A. 1-0 stock**
  - B. 2-0 stock
  - C. 2-1 stock
  - D. 2-2 stock
  - E. None of the above
83. Which of the following can ruin a tree planting?
- A. rabbits
  - B. fire
  - C. cattle grazing
  - D. A and C
  - E. All of the above**
84. Windbreaks can provide all except the following benefits:
- A. increased wildlife habitat
  - B. decreased home heating costs
  - C. increased property values
  - D. increased fire protection**
  - E. None of the above
85. The three steps in using the tree measuring stick are:
- A. measure tree diameter (DBH), estimate 6-foot logs, read tree volume from stick
  - B. measure tree diameter at DBH, estimate 12-foot logs, read tree volume from stick**
  - C. measure tree volume (DBH), estimate 12-foot logs, read tree diameter from stick
  - D. measure DBH volume, estimate 12-foot logs, read tree volume from stick
  - E. None of the above

86. When estimating number of 12-foot logs with a tree measuring stick one usually paces off \_\_\_\_\_ feet from the base of the tree:

A. 25

**B. 50**

C. 75

D. 100

E. None of the above

87. If someone offered you free wood, which would you take to heat your home?

A. Boxelder

B. Catalpa

C. Aspen

D. Cottonwood

**E. White Oak**

88. Which of the following actions is best to help firewood dry faster?

A. cut wood into large pieces

B. drive nails into wood

**C. pile small pieces in single rows**

D. store wood against a building

E. bury in the ground

89. If someone offered you free wood, which would you take to heat your home?

A. Basswood

B. Sycamore

**C. Beech**

D. Catalpa

E. Sassafras

90. Which of the following is a relatively light wood in terms of weight per volume?

A. Black Walnut

B. Flowering Dogwood

C. Common Persimmon

**D. Northern Catalpa**

E. Osage-orange

## National FFA Questions

1. The purpose of a Hypo-Hatchet is to:
  - A. Apply a blaze to trees to mark boundaries
  - B. Cut small trees quickly
  - C. Girdle a tree
  - D. Inject a tree with herbicide**
2. To view an area in three dimensions use:
  - A. A pair of aerial photographs and a magnifying lens
  - B. A pair of aerial photographs and a stereoscope**
  - C. A pair of topographic maps and a magnifying lens
  - D. A pair of topographic maps and a stereoscope
3. You are using a clinometer to determine tree height on level ground from a distance of 100'. Your reading to the top of the tree is +75%; the bottom reading is -5%. What is the height of the tree?
  - A. 70'
  - B. 75'
  - C. 80'**
  - D. 100'
4. Amber glass wedge prisms are more useful than clear glass prisms:
  - A. At night
  - B. Bright sunlight
  - C. In low light and hazy conditions**
  - D. Both A & B
5. Chain saw chaps protect the wearer by:
  - A. Bouncing the saw off the leg and away from the body
  - B. Clogging the moving chain with cut-resistant fabric**
  - C. Preventing the wearer from becoming tangled in briars
  - D. Using a thin layer of metal to prevent the chain from cutting through
6. One way in which white oaks differ from red oaks is that the acorns of white oak:
  - A. Mature in one season**
  - B. May take five or more years to reach maturity
  - C. Remain on the tree for three years
  - D. Take two seasons to mature
7. Which of the following pest management strategies is categorized as a biological method?
  - A. Fumigate nursery beds before sowing or planting
  - B. Harvest diseased timber.
  - C. Release parasites or predators to reduce pest populations**
  - D. Remove bark from wood that may harbor or attract beetle.

8. Which of the following pest management strategies is categorized as a silvicultural method?
- A. Coat uninfested wood with pain, wax, varnish, or oil.
  - B. Harvest mature trees or stands**
  - C. Use conventional insecticides
  - D. Open hardwood stands
9. Which type of habitat most greatly benefits Woodcock?
- A. Dense coniferous forests
  - B. Moist woodlands**
  - C. Open brushy areas
  - D. Open hardwood stands
10. Forest and open meadows provide ideal habitats for:
- A. American Bison
  - B. American Elk**
  - C. Mountain Goat
  - D. Pronghorn Antelope
11. A \_\_\_\_\_ is the type of control burn best used for hazard reduction in young stands with a heavy layer of litter.
- A. Back fire**
  - B. Flank fire
  - C. Ring fire
  - D. Strip head fire
12. *Tsuga canadensis* is the scientific name for:
- A. Black Walnut
  - B. Eastern Hemlock**
  - C. Longleaf Pine
  - D. Pecan
13. Which of the following would be considered a method of direct visitor management in managing outdoor recreation areas?
- A. Eligibility requirements
  - B. Enforcement of regulations**
  - C. Information distribution
  - D. Physical alterations
14. Rain, snow, sleet and hail are forms of:
- A. Evaporation
  - B. Infiltration
  - C. Precipitation**
  - D. Transpiration

15. The mid-summer water temperature in a stream flowing through a clear cut would be \_\_\_\_\_ the temperature of the water prior to the cut.
- A. Higher than**
  - B. Lower than
  - C. The same as
16. Which of the following would be considered mechanical tree damage?
- A. Frost crack
  - B. Girdling roots**
  - C. Powdery mildew
  - D. Sunscald
17. A restricted-use pesticide may only be purchased and used by:
- A. Adults over 18 years old
  - B. Certified applicators**
  - C. Cooperative Extension Agents
  - D. Licensed foresters and arborists
19. Which of the following species has dark brown heartwood?
- A. Hickory
  - B. Magnolia
  - C. Redwood**
  - D. White Pine
20. \_\_\_\_\_ are desirable pulp species because they can be bleached easily.
- A. Cedar and Firs
  - B. Oaks and Hickories
  - C. Pines and Firs
  - D. Spruces and Hemlocks**
21. White Pine, Ponderosa Pine and Red cedar sawdust and shavings are particularly useful for:
- A. Animal bedding**
  - B. Dyes
  - C. Metal finishing
  - D. Sawdust- cement concrete
22. A topographic divide is a mechanism for defining
- A. Forest management areas
  - B. Housing developments
  - C. Rangelands
  - D. Watersheds**

23. Doyle, Scribner and International Rules are:
- A. Codes governing ethical behavior by foresters around the world
  - B. Means by which log volumes are determined**
  - C. Rules used in logging competitions
  - D. Regulations concerning how timber is marked for sale
24. Merchantable height is that height from the stump to:
- A. A specified minimum top diameter**
  - B. Half-way between the first branch and the top of the tree
  - C. That point which is 2/3 of the total height of the tree
  - D. The very top of the tree
25. Which of the following is not commonly used for planting tree seedlings?
- A. Auger
  - B. Dibble
  - C. Mattock
  - D. Pulaski**
26. An advantage of natural forest regeneration is:
- A. Better access for fire equipment
  - B. Better early root system development by seedlings**
  - C. Good control over stocking and spacing
  - D. Less need for precommercial thinning
27. Mechanized felling:
- A. Is most useful when logs are to be handled individually after the felling process
  - B. Is slower and more expensive than manual felling
  - C. May be a disadvantage in areas of thick brush
  - D. May improve efficiency by increasing felling production**
28. An articulated log skidder is:
- A. A modified farm tractor
  - B. Less maneuverable than a non-articulated skidder
  - C. One with a hinge in the midsection**
  - D. Suitable only for gentle terrain
29. Which of the following is a fixed cost of a logging operation?
- A. Electricity
  - B. Fuel
  - C. Rent for office space**
  - D. Telephone

30. A source of revenue for a logging operation is:
- A. Depreciation
  - B. Income Tax
  - C. Log Sales**
  - D. Vehicle insurance
31. Any chemical purchased for commercial use will be accompanied by details relating to chemical make-up, first aid instructions, proper disposal, and health concerns. This information is contained in the:
- A. Material Safety Data (MSD) Sheets**
  - B. Safe Materials Use (SMU) Sheets
  - C. Chemical Safety Data (CSD) Sheets
  - D. Safe Pesticide Application (SPA) Sheets
32. A good way to improve urban and suburban wildlife habitats is to:
- A. Plant flower gardens
  - B. Plant specimen trees.
  - C. Reduce mowed areas**
  - D. Remove or decrease under story
33. Trees planted along city streets are valuable for increasing:
- A. Particulate collections and gas removal**
  - B. Summer air temperatures
  - C. Summer temperatures of sidewalks and road surfaces.
  - D. Wind velocity
34. Safety gear, such as hard hats and goggles should meet ANSI standards. ANSI represents:
- A. American National Standards Institute**
  - B. American Naval Safety Inspectors
  - C. American National Safety Institute
  - D. Association of North American Safety Inspectors
35. Workplace safety is overseen by OSHA. This acronym stands for:
- A. Occupational Safety and Health Administration**
  - B. Occupational Safety and Health Association
  - C. Office of Safety and Health Affairs
  - D. Organization of Safety and Health Affairs
36. If you have 13 paces per chain, how many paces are in two miles?
- A. 26
  - B. 208
  - C. 1716
  - D. 2080**

37. Square blocks measure six miles per side. The blocks are called:
- A. Corners
  - B. Rangers
  - C. Sections
  - D. Townships**
38. What is the site quality of a Slash Pine tree that is 25-years-old and 60 feet tall?
- A. 25
  - B. 60**
  - C. 65
  - D. Cannot determine without a site quality curve
39. How many sections are in a township?
- A. 32
  - B. 36**
  - C. 64
  - D. 640
40. If you are traveling at an azimuth reading of 315 you are heading:
- A. Northeast
  - B. Northwest**
  - C. Southeast
  - D. Southwest
41. An example of a defoliating insect is a:
- A. Aphid
  - B. Bark Beetle
  - C. Pine Sawfly**
  - D. Wasp
42. Which of the following is the correct format for writing a legal description of a land parcel?
- A. NE  $\frac{1}{4}$  of SE  $\frac{1}{4}$ , R2E, T4N, S16
  - B. NW  $\frac{1}{4}$  of SW  $\frac{1}{4}$ , S16, T4N, R2E**
  - C. R2E, S16, T4N, NW  $\frac{1}{4}$  of SW  $\frac{1}{4}$
  - D. S16, T4N, R2E, NE  $\frac{1}{4}$  of SE  $\frac{1}{4}$
43. The function of the cambium in the tree is \_\_\_\_\_.
- A. Development
  - B. Growth in height of tree
  - C. Growth of wood and bark cells**
  - D. Production of carbohydrates

44. Homeowners can reduce cooling costs by:
- A. Not planting any trees at all
  - B. Planting trees on the east and west sides of the house
  - C. Planting trees on the north side of the house
  - D. Planting trees on the south and west sides of the house**
45. Which of these tree species has compound leaves?
- A. American Holly (*Ilex opaca*)
  - B. Black Cherry (*Prunus serotina*)
  - C. Common Sassafras (*Sassafras albidum*)
  - D. White Ash (*Fraxinus Americana*)**
46. A soil profile is made of different soil layers. The proper term for a soil layer is:
- A. Horizon**
  - B. Strata
  - C. Vertical
  - D. Zone
47. The greatest amount of distortion on an aerial photograph occurs at:
- A. The bottom half of the photo
  - B. The center of the photo
  - C. The edges of the photo**
  - D. The top half of the photo
48. During forestry operations, buffer strips should be left along streams to reduce erosion and provide shade for fish. These buffer strips are called:
- A. Broad-Based Dip Zones (BDZ)
  - B. Forest Preservation Zones (FPZ)
  - C. Regeneration Shade Zones (RSZ)
  - D. Streamside Management Zones (SMZ)**
49. The final stage of fire suppression is called:
- A. Backfire
  - B. Direct attack
  - C. Initial attack
  - D. Mop-Up**
50. To determine site index two measurements are needed. They are:
- A. Age and diameter
  - B. Diameter and distance from the closest tree
  - C. Height and age**
  - D. Height and diameter

51. A Pulaski is used in firefighting for:
- A. Felling and clearing
  - B. Grubbing and chopping**
  - C. Raking and sweeping
  - D. Scraping and raking
52. Convulsions, secretions from nose and ears, loss of consciousness and inability to breathe are symptoms of:
- A. Heat stroke
  - B. Hypothermia
  - C. Severe pesticide poisoning**
  - D. Smoke inhalation
53. The greatest amount of forest plantation regeneration occurs in which region of the United States?
- A. North Eastern
  - B. Pacific Coast
  - C. Rocky Mountain
  - D. Southern**
54. If a tree farmer plants seedlings on 8' X 10' spacing, he/she will plant \_\_\_\_\_ seedlings per acre.
- A. 450
  - B. 545**
  - C. 4356
  - D. 5445
55. Reducing a felled tree into marketable size logs is called:
- A. Bucking**
  - B. Felling
  - C. Limbing
  - D. Skidding
56. To locate and map points, the best tool to use would be the:
- A. Aerial photograph
  - B. GPS receiver**
  - C. Hand compass
  - D. Topographic map
57. The contour interval on a topographic map indicates the:
- A. Difference in elevation represented by adjoining contour lines**
  - B. Different types of contour lines
  - C. Elevation at a specific point
  - D. Elevation of a general area

58. Your company plans a prescribed burn on a tract of land that is 20 chains by 10 chains. The cost of prescribed burning in your area is \$5.00/ acre. Under typical conditions, how much will it cost to prescribe burn your land?
- A. \$15
  - B. \$100**
  - C. \$500
  - D. \$1000
59. Which of the following would be a biological pest management strategy?
- A. Coating uninfested wood with paint
  - B. Harvesting mature trees or stands
  - C. Releasing parasites or predators**
  - D. Spraying with conventional pesticides
60. A defoliator is an insect that:
- A. Chews bark and wood
  - B. Chews leaves**
  - C. Feeds on buds
  - D. Feeds on the tips of twigs
61. Which of the following is considered a parasitic cause of disease?
- A. Drought
  - B. Fungi**
  - C. Ice Storm
  - D. Salt
62. How many acres are in an area 25 chains long and 20 chains wide?
- A. 0.5 acres
  - B. 5 acres
  - C. 50 acres**
  - D. 500 acres
63. In a forest ecosystem a tree with a small crown receiving light from above and almost none from the sides would be considered.
- A. Co-dominant
  - B. Dominant
  - C. Inferior
  - D. Intermediate**
64. Thinning overstocked stands in order to manage or control pests is a \_\_\_\_\_ pest management strategy.
- A. Biological
  - B. Chemical
  - C. Regulatory
  - D. Silvicultural**

65. A conifer with scales rather than needles is the:

- A. Cedar**
- B. Fir
- C. Spruce
- D. Yew

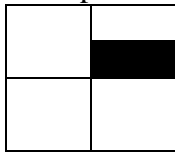
66. An example of a stem canker disease is:

- A. Chestnut blight**
- B. Dutch elm disease
- C. Fomes annosus
- D. White pine blister rust

67. Soil with a pH of 7.0 is considered:

- A. Acidic
- B. Alkaline
- C. Neutral**
- D. None of the above

68. What is the legal description for the tract of land shown below?



- A. N  $\frac{1}{2}$  of the NE  $\frac{1}{4}$  of Section 30, Township, Range
- B. NE  $\frac{1}{4}$  of the SW  $\frac{1}{2}$  of Section 30, Township, Range
- C. S  $\frac{1}{4}$  of the NE  $\frac{1}{4}$  of Section 30, Township, Range
- D. S  $\frac{1}{2}$  of the NE  $\frac{1}{4}$  of Section 30, Township, Range**

69. What is the size of the area described above?

- A. 20 acres
- B. 40 acres
- C. 80 acres**
- D. 100 acres

70. A genus of tree noted for its great size and long life is:

- A. Alnus
- B. Betula
- C. Salix
- D. Sequoia**

71. Magnetic declination is the:

- A. Angle of difference between True North and Magnetic North**
- B. Angle of difference between True North and True South
- C. Angle of slope on a hill
- D. Standard error for pacing

72. A primary benefit to selection cutting as a harvest method is that:
- A. All trees are removed at once, thus giving the owner maximum value
  - B. Erosion is at a minimum**
  - C. It is the most cost effective
  - D. None of the trees left uncut are disturbed
73. The term “chlorosis” or “chlorotic” refers to:
- A. A plant containing chlorine
  - B. Build up of chlorophyll
  - C. Excessive leaf drop
  - D. Yellowing of the leaves**
74. Growth at the end of the stem is called:
- A. Preliminary growth
  - B. Primary growth
  - C. Terminal growth**
  - D. Turgid growth
75. A very highly valued wood used in furniture construction is:
- A. Alder
  - B. Hackberry
  - C. Walnut**
  - D. Yew
76. The plant hardiness zone map is a map, developed by the USDA, which divides the country into ten zones based on:
- A. Average summer temperatures
  - B. Average winter temperatures**
  - C. Geographic region
  - D. Species location
77. Aggressive reproduction, rapid growth, and high quality wood have made \_\_\_\_\_ the most managed pine of the northern forest.
- A. Loblolly Pine
  - B. Longleaf Pine
  - C. Red Pine
  - D. White Pine**
78. A GPS utilizes \_\_\_\_\_ to locate points
- A. Computerized maps
  - B. Magnetic North
  - C. Satellites**
  - D. True North

79. Birch is most easily recognized by its:

- A. Bark**
- B. Form
- C. Fruit
- D. Leaf Shape

80. Tree species that have male and female flowers on separate trees are called:

- A. Bioecious
- B. Dioecious**
- C. Monoecious
- D. Triecious

81. About two-thirds of the U.S. forest is considered:

- A. Commercial**
- B. Non-commercial
- C. Park lands
- D. Wilderness areas

82. Forest pathology is the study of:

- A. Forest habitats
- B. Forest insects
- C. Tree identification
- D. Tree diseases**

83. The term “kerf” refers to:

- A. A piece of protective clothing worn by chain saw operators
- B. The amount of time it takes to saw through a log completely
- C. The size of a log
- D. The width of a cut made by a saw**

84. The abbreviation “IPM” stands for:

- A. Integral Pest Maintenance
- B. Integral Pest Management
- C. Integrated Pest Management**
- D. Integrated Product Management

85. A cant that measures 12” X 12” X 40” contains \_\_\_\_\_ board feet of timber.

- A. 40**
- B. 144
- C. 400
- D. 4800

86. *Pinus palustris* is the scientific name for:
- A. Eastern White Pine
  - B. Longleaf Pine**
  - C. Ponderosa Pine
  - D. Spruce Pine
87. The process of heating seasoned wood in a preservative for several hours and quickly submerging the wood in a cold preservative and allowing it to remain there for several hours more is called:
- A. Cold-soaking
  - B. Double diffusion
  - C. Extraction
  - D. Hot-cold bath**
88. Best Management Practices include all of the following EXCEPT:
- A. Allowing goats to graze in newly planted areas to protect seedlings from weed competition**
  - B. Control of logging during wet seasons
  - C. Temperatures of sidewalks and road surfaces
  - D. Using buffers
89. Which of the following would be considered a public employment opportunity?
- A. Audubon Society
  - B. Bureau of Land Management**
  - C. International Paper
  - D. Weyerhaeuser
90. Chromated zinc chloride is superior to zinc chloride due to its
- A. Lower cost
  - B. Lower fire hazard
  - C. Resistance to flaking
  - D. Resistance to leaching**
91. Surveys of the boundaries of a timber tract are done to
- A. Determine stand classification
  - B. Establish exact property lines**
  - C. Find the volume of timber on the tract
  - D. Locate fences and firebreaks
92. Piling used in docks, wharves, bridges, and foundations must have a minimum quality
- A. Class A
  - B. Class B**
  - C. Class C
  - D. Class D

93. The width of a cut made by a saw is called the
- A. Cant
  - B. Gap
  - C. Kerf**
  - D. Notch
94. The first consideration in using chemical pesticides should always be
- A. Ease of application
  - B. Economic feasibility
  - C. Safety**
  - D. Timing of the application
95. The most widely known and used hardwood is
- A. Ash
  - B. Hickory
  - C. Maple
  - D. Oak**
96. The weight of the complete tree that can be used to produce energy is called:
- A. Biomass**
  - B. Energy flow
  - C. Energy fuel value
  - D. Thermal unit
97. The oldest and most common method of remote sensing used in forestry is:
- A. Aerial photography**
  - B. Electromagnetic radiation
  - C. Ground cruise
  - D. Thermal scan
98. John's normal pace is 2.9 feet long. How many paces would he need to measure three chains?
- A. 15
  - B. 30
  - C. 68**
  - D. 72
99. Which of the following is NOT considered a primary wood industry?
- A. Furniture manufacturing**
  - B. Plywood plant
  - C. Pulp mill
  - D. Sawmill

100. Which of the following insects is NOT a serious problem in the Northeast?
- A. Forest tent caterpillar
  - B. Gypsy moth caterpillar
  - C. Mountain pine beetle**
  - D. Spruce budworm
101. Which of the following is true with regard to crown fires?
- A. They almost always start as surface fires**
  - B. They are more common in deciduous forests
  - C. They are the most common type of forest fires
  - D. They are the slowest spreading of all fires
102. As a general rule, the market demand for hardwood
- A. Far exceeds that for softwood
  - B. Has been declining at a steady rate since the 1980's
  - C. Is greatest in the Southeast
  - D. Varies between regions**
103. The 1986 Tax Reform Act affected forest investments by
- A. Allowing forest owners to charge annual management costs against current income
  - B. Establishing differential tax rates for all types of long-term capital gains income
  - C. Keeping the economic climate for long-term forest investments the same
  - D. Phasing out differential tax rates for all types of long-term capital gains income**
104. Which of the following is NOT true with regard to the topographic Abney level?
- A. It contains a scale that directly corresponds to the correction graduations on a slope tape.
  - B. It is used primarily on normal terrain**
  - C. It is used to supplement slope tapes on very steep terrain
  - D. It measures the angle between the horizontal plane and line of sight along the scope
105. A growth-removal ratio of 1:27 means that
- A. Growth exceeded removal by 27 percent**
  - B. Removal exceeded by growth by 27 percent
  - C. 27 trees were planted for every one tree cut
  - D. One tree was planted for every 27 trees cut
106. The current trend in Forest Service ecosystem management policy is
- A. Allocation of resources
  - B. Clear cutting as much as possible
  - C. Holistically assessing each situation**
  - D. Implementing geographical boundaries to separate various uses

107. Oriented Strand Board (OSB) is:
- A. Made from recycled plastic chips
  - B. Made from wood chips**
  - C. More expensive to produce than plywood veneers
  - D. Showing a rapid decline in use in the United States
108. Abnormal tissue growth on trees that is caused by insects or mites is called
- A. Conk
  - B. Fungus
  - C. Gall**
  - D. Pitch
109. Which of the following is NOT considered a naturally durable wood?
- A. Black Walnut
  - B. Cedar
  - C. White Oak
  - D. White Pine**
110. A standard cord of wood measures:
- A. 128 cubic feet**
  - B. 128 square feet
  - C. 160 cubic feet
  - D. 160 square feet
111. Which of the following statements is true with respect to forest ecosystem?
- A. A disease outbreak is likely to do more damage to a mixed ecosystem than a single-species plantation
  - B. A single-species plantation is more resistant to insect damage than a mixed one
  - C. One natural disaster in the stand will not result in a total loss in timber resources
  - D. The more diverse and ecosystem, the more resistant it is to insect damage**
112. The life span of the adult gypsy moth is usually about
- A. 1 day
  - B. 7 days**
  - C. 15 days
  - D. 45 days
113. The most damaging pollutant in the United States is currently thought to be
- A. Lead
  - B. Nitrates
  - C. Ozone**
  - D. Zinc

114. The part of the logging operation in which logs are dragged from where they were cut to a central location for loading is called
- A. Bucking
  - B. Felling
  - C. Snagging
  - D. Skidding**
115. In rangeland management, an animal unit month (AUM) is
- A. The amount of organic fertilizer deposited by a 1,000 pound cow in one month**
  - B. The amount of forage needed to feed a 1,000 pound cow for one month
  - C. The number of cattle grazing in a specific area for one month
  - D. The number of cattle sold during one month
116. The first chief of the United States Forest Service was:
- A. Franklin B. Hough
  - B. Gifford Pinchot**
  - C. James Audubon
  - D. John McSweeney
117. A compass needle point to magnetic north, which is the same as
- A. The North Pole
  - B. True North
  - C. 1,300 miles from True North**
  - D. 13,000 miles from True North
118. Removing trees that have been or may be killed or damaged due to insects, ice, fire, and other agents is called
- A. Liberation
  - B. Pruning
  - C. Salvage Cutting**
  - D. Sanitation Cutting
119. Paper was first made from ground mulberry bark by the:
- A. American Indians
  - B. Chinese**
  - C. Egyptians
  - D. Incas
120. Water combined within the cell wall in wood is called
- A. Bound water**
  - B. Fiber water
  - C. Free water
  - D. Suppressed water

121. When planting trees, a spacing of 8 X 8 feed will result in how many trees per acre?  
A. 340  
**B. 680**  
C. 3400  
D. 6800
122. The most destructive of all forest insects are  
**A. Borers**  
B. Gall mites  
C. Leaf feeders  
D. Plant-sucking mites
123. The scientific name for post oak is  
A. Quercus falcate  
B. Quercus lyrata  
C. Quercus phellos  
**D. Quercus stellata**
124. Of all of the environmental factors that influence the growth of trees, the most limiting is  
A. Topography  
**B. Moisture**  
C. Soil quality  
D. Temperature
125. Which of the following is not a correct procedure to use in planting seedling?  
A. Always pack soil firmly around the roots  
B. Plant only one tree in a given spot  
**C. Plant seedlings in an upright position, with the roots double up**  
D. Plant seedlings slightly deeper than they grew in the nursery
126. Which of the following would NOT make you more successful in a forestry career?  
A. Demonstrating knowledge and skills  
**B. Doing everything by yourself, including team assignments**  
C. Good communication skills  
D. Looking professional
127. Which of the following is NOT considered a common method of testing improved seeds or seedlings?  
A. Clone Testing  
B. Progeny Testing  
C. Provenance Testing  
**D. Regulation Testing**

128. Which of the following is an accurate portrayal of the stages of succession?
- A. Annual weeds, perennials, shrubs, young trees**
  - B. Annual weeds, shrubs, perennials, young trees
  - C. Annual weeds, young trees, shrubs, perennials
  - D. Perennials, annual weeds, shrubs, young trees
129. The Material Safety Data (MSD) sheet contains information about all of the following EXCEPT:
- A. Chemical make-up
  - B. Cost per application**
  - C. First aid instructions
  - D. Proper disposal
130. Which of the following careers would most likely involve managing timberland for private landowners?
- A. Forest Engineer
  - B. Professional Consulting Forester**
  - C. Research Forester
  - D. Urban Forester
131. Maps that convert three-dimensional feature into a two-dimensional representation are:
- A. Contour
  - B. Raised-relief
  - C. Relief
  - D. Topographic**
132. A tree with very heavy, strong and durable wood that has a rich dark brown color is:
- A. Ash
  - B. Hickory
  - C. Maple
  - D. Walnut**
133. Which of the following is not usually considered a part of fire management?
- A. Presuppression
  - B. Prevention
  - C. Retarding**
  - D. Suppression
134. The Federal agency that studies and monitors geology and publishes topographic maps is the:
- A. Department of the Interior
  - B. Environmental Protection Agency
  - C. Department of Agriculture
  - D. Geological Survey (USGS)**

135. The first National Park established in the United States was:
- A. Grand Canyon
  - B. Smoky Mountain
  - C. Yellowstone**
  - D. Yosemite
136. Outgrowths which cause trees to grow in irregular patterns that result in beautifully grained woods are called:
- A. Burls**
  - B. Forbs
  - C. Junglones
  - D. Spalts
137. A “shake and bake” is a:
- A. Drip Torch
  - B. Fire Plow
  - C. Fire Shelter**
  - D. Soil Dryer
138. Which of the following is a significant problem in nurseries that grow coniferous seedlings?
- A. Damping Off**
  - B. Needle Cast
  - C. Pitch Canker
  - D. Slime Flux
139. Which of the following U.S. presidents created the CCC (Civilian Conservation Corps)?
- A. Dwight D. Eisenhower
  - B. Franklin D. Roosevelt**
  - C. Theodore Roosevelt
  - D. Woodrow Wilson
140. Using containerized seedlings rather than bare root seedlings usually results in:
- A. A much shorter planting season
  - B. Easier handling and transportation
  - C. Improved rates of survival and growth**
  - D. Lower initial cost for seedlings

## Forestry CDE Questions Requiring Math Calculations

The formulas for these questions come from *Forest and Forestry*, 6<sup>th</sup> edition.

### Problem 1

- A. Your company plans a prescription burn on a tract of land that is 20 chains by 10 chains. The cost of prescription burning in your area is \$5.00/acre. Under typical conditions, how much will it cost to prescription burn this tract of land?

a. \$ 15 <b>b. \$ 100</b> c. \$ 500 d. \$ 1,000	1 acre = 10 square chains 20 chains x 10 chains = 200 sq. chains (200 sq. chains)/(10 sq chains/acre) = 20 acres 20 acres x \$5/acre = \$100.00
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- B. You have a tract of land that is 30 chains by 25 chains. The cost to prescription burn this area is \$6/ acre. Under typical conditions, how much will it cost to prescription burn this area?

a. \$ 265 b. \$ 330 <b>c. \$ 450</b> d. \$4500	1 acre = 10 square chains 30 chains x 25 chains = 750 sq. chains (750 sq. chains)/(10 sq chains/acre) = 75 acres 75 acres x \$6/acre = \$450.00
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### Problem 2

- A. John's normal stride is 2.9 feet long. How many paces would he need to measure 3 chains?

a. 15 paces b. 30 paces <b>c. 68 paces</b> d. 72 paces	1 chain = 66 feet 3 chains * 66 feet/chain = 198 feet 198 feet/2.9 (feet/pace) = 68.3 paces (round to 68 paces)
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- B. Tracy's normal stride is 3.3 feet. How many paces would she need to measure 2 chains?

a. 6.6 paces b. 26 paces c. 32 paces <b>d. 40 paces</b>	1 chain = 66 feet 2 chains * 66 feet/chain = 132 feet 132 feet/3.3 (feet/pace) = 40 paces
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### Problem 3

- A. If you have 13 paces per chain, how many paces are in two miles?

a. 26 paces b. 208 paces c. 1,216 paces <b>d. 2,080 paces</b>	1 chain = 13 paces 1 mile = 80 chains so 2 miles = 160 chains 160 chains x 13 paces/chain = 2,080 paces
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- B. If you have 11 paces per chain, how many paces are in 3 miles?

a. 642 paces <b>b. 2,640 paces</b> c. 4,062 paces d. 6,204 paces	1 chain = 11 paces 1 mile = 80 chains so 3 miles = 240 chains 240 chains x 11 paces/chain = 2,640 paces
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Problem 4

A. If a tree farmer plants seedlings on a 12' x 12' spacing, he/she will plant \_\_\_\_\_ seedlings per acre.

a. 144 seedlings b. 288 seedlings c. <b><u>303 seedlings</u></b> d. 426 seedlings	1 acre = 43,560 square feet (12 feet x 12 feet) per seedling = 144 square feet/seedling 43,560 square feet /144 square feet/seedling = 303 seedlings
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B. If a tree farmer If a tree farmer plants seedlings on a 8' x 10' spacing, he/she will plant \_\_\_\_\_ seedlings per acre.

a. <b><u>544 seedlings</u></b> b. 588 seedlings c. 608 seedlings d. 644 seedlings	1 acre = 43,560 square feet (8 feet x 10 feet) per seedling = 80 square feet/seedling 43,560 square feet /80 square feet/seedling = 544.5 seedlings (can't plant 1/2 seedling, round down)
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Problem 5

A. How many acres are in an area 25 chains long and 20 chains wide?

a. 1/2 acre b. 5 acres c. <b><u>50 acres</u></b> d. 500 acres	10 square chains = 1 acre 25 chains x 20 chains = 500 square chains 500 square chains/10 (square chains/acre) = 50 acres
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B. How many acres are in an area 10 chains by 15 chains?

a. 10 acres b. 12 acres c. 14 acres d. <b><u>15 acres</u></b>	10 square chains = 1 acre 10 chains x 15 chains = 150 square chains 150 square chains/10 (square chains/acre) = 15 acres
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