

**2017 National FFA Forestry
Career Development Event
Knowledge Exam**

Directions: Select the best answer and bubble it in on the score sheet provided. You may write on test booklet, if needed.

1. Which of the following statements is MOST TRUE with respect to forest ecosystems?
NRS.01.02.01
 - a. A disease outbreak is likely to cause more damage to a mixed-species ecosystem compared to a single-species plantation.
 - b. A single-species plantation is more resistant to insect damage compared to a mixed-species ecosystem.
 - c. One natural disaster will not result in a total loss of the timber resource.
 - d. The more diverse the ecosystem, the more resistant it is to insect damage.

2. Which tree species is the most tolerant to flooding?
NRS.01.02.01
 - a. Shortleaf Pine
 - b. Black Walnut
 - c. Red Oak
 - d. Green Ash

3. Which of the following is an accurate portrayal of the stages of succession? NRS.01.05.01
 - 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

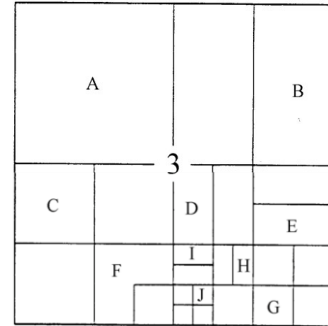
4. Of the environmental factors listed below, generally the MOST limiting one for a shade intolerant species is _____. NRS.01.05.01
 - a. Moisture
 - b. Sunlight
 - c. Soil Quality
 - d. Temperature

5. Which of the following site characteristics are less favorable for tree growth? NRS.01.01.01
 - a. Deep soil, fine texture, good drainage
 - b. Gentle slopes
 - c. Broad ridges and lower slopes
 - d. South and west facing slopes

6. One acre contains how many square feet? NRS.03.02.01
 - a. 34,650
 - b. 43,560
 - c. 43,600
 - d. 36,350

7. Name the regeneration system where healthy, large-crowned trees are left and the new stand is established under the partial shade of the older trees. NRS.01.01.01
 - a. Clearcut
 - b. Seed Tree
 - c. Shelterwood
 - d. Single-tree

8. Using the picture provided, which represents a section of land, what is the correct way to describe the area marked "E". NRS.03.02.01
- N $\frac{1}{2}$ NE $\frac{1}{4}$ SE $\frac{1}{4}$, Sec. 22, T.5N, R.7W
 - S $\frac{1}{2}$ NE $\frac{1}{4}$ SE $\frac{1}{4}$, Sec. 22, T.5N, R.7W
 - W $\frac{1}{2}$ NW $\frac{1}{4}$ SE $\frac{1}{4}$, Sec. 22, T.5N, R.7W
 - E $\frac{1}{2}$ NW $\frac{1}{4}$ SE $\frac{1}{4}$, Sec. 22, T.5N, R.7W



9. Using the picture above, how many acres are represented in the area marked "B"? NRS.03.02.01
- 640 acres
 - 160 acres
 - 80 acres
 - 20 acres
10. When planting trees, a spacing of 8 x 8 feet will result in how many trees per acre? NRS.01.05.03
- 340
 - 680
 - 889
 - 1,210
11. The study of insects and their relationship with the forest is called _____. CS.05.01.02
- Dendrology
 - Forest Pathology
 - Forest Hydrology
 - Forest Entomology
12. Abnormal tissue growth on trees that is caused by insects or mites is called a _____. PS.03.03.01
- Conk
 - Fungus
 - Gall
 - Pitch
13. Defoliators are insects that attack the _____ of the tree. PS.03.03.01
- Bark
 - Buds
 - Roots
 - Leaves
14. Which of the following is true with regard to crown fires? NRS.04.04.01
- They almost always start as surface fires.
 - They are more common in deciduous forests.
 - They are the most common type of forest fires.
 - They are the slowest spreading of all fires.

15. Which is NOT a function of those plants growing next to the stream in a riparian forest buffer? NRS.01.05
- Slow surface water runoff from farm field converting concentrated flow to sheet flow.
 - Reduce velocity of over-the-bank floodwaters.
 - Shade the stream and moderate water temperatures.
 - Storage and breakdown of NPS pollutants.
16. Windbreaks are most effective when oriented at what angle to prevailing or troublesome winds? NRS.01.05.03
- 30 degrees
 - 45 degrees
 - 60 degrees
 - 90 degrees
17. The most widely known and used hardwood is _____. NRS.01.02.01
- Ash
 - Hickory
 - Maple
 - Oak
18. What part of a timber sale contract depends upon the harvesting objective? NRS.01.05.03
- Preamble
 - Description of sale area
 - Conditions of payment
 - Designation of which trees to cut
19. A standard cord of wood measures _____. NRS.02.04.01
- 128 cubic feet
 - 128 square feet
 - 160 cubic feet
 - 160 square feet
20. Which of the following species is NOT considered a naturally durable wood? NRS.01.02.01
- Eastern Redcedar
 - White Oak
 - Black Walnut
 - Cottonwood
21. In general, wood contains _____, _____, and _____.
ESS.01.02.01
- 77% volatile matter, 20% fixed carbon, 2% ash
 - 6% hydrogen, 52% carbon, 43% oxygen
 - 70% hydrogen oxide, 25% carbon, 5 % volatile matter
 - None of the above.
22. A _____ is a region where water from rain and snow are absorbed into the soil.
NRS.01.05
- Biological value
 - Shrub layer
 - Watershed
 - Forest floor
23. Growth in the diameter of a root is _____. PS.02.02.03
- Primary growth
 - Secondary growth
 - Root hairs
 - Root cap growth

24. A tensiometer is an instrument that measures the amount of _____ in the soil. CS.03.04.02
- a. Fertility
 - b. Dryness
 - c. Pressure
 - d. Moisture
25. An animal with a diet of plants only, is called a _____. NRS.01.02.03
- a. Herbivore
 - b. Predator
 - c. Carnivore
 - d. Omnivore
26. Which of these forestry practices is illegal in the United States? CE.03.04.03
- a. Transplanting
 - b. Pruning
 - c. Mechanical Pulping
 - d. Spiking
27. Some of the best hardwood logs are sawed into thick pieces of high-quality wood for veneers, these pieces are called _____. NRS.02.04.01
- a. Flitches
 - b. Veneer
 - c. Plywood
 - d. Beam
28. A hydropulper is a machine that reduces _____ into pulp. CS.06.04.02
- a. Plastics
 - b. Wood particles
 - c. Recycled paper
 - d. Water
29. Cytoplasm includes all of the cell contents except for the _____. PS.02.02
- a. Vacuole
 - b. Chloroplast
 - c. Nucleus
 - d. Golgi Body
30. _____ is the flower organ in which pollen grains develop and mature. PS.02.02
- a. Filament
 - b. Sepals
 - c. Stigma
 - d. Anther
31. When the photosynthesis process is interrupted, the enzyme reacts with oxygen and reverses the process of photosynthesis. This process is called _____. PS.02.02.04
- a. Calvin Cycle
 - b. Respiration
 - c. Transpiration
 - d. Dehydration Synthesis
32. A forest that has been regenerated from the roots, stumps, or branches of other trees is known as a _____. NRS.01.05.01
- a. High Forest
 - b. Low Forest
 - c. Medium Forest
 - d. Old Forest

33. Which of the following is the MOST significant reason species have become threatened or endangered? CS.04.01.01
- | | |
|------------------------|-------------------------|
| a. Controlled as pests | c. Illegal Killing |
| b. Pesticides | d. Landscape Alteration |
34. A problem associated with log skidding and road construction resulting in contamination of surface water is known as _____. CS.04.01.01
- | | |
|------------|--------------|
| a. Bucking | c. Siltation |
| b. Scaling | d. Skidding |
35. This is the most important source of biomass across the globe. NRS.02.04.03
- | | |
|-----------------------|---------------------------|
| a. Agricultural crops | c. Forests |
| b. Crop residues | d. Crop processing wastes |
36. If a forested area is cleared to grow crops and then is allowed to revert back to its natural ecological environment it is called _____. NRS.01.05.01
- | | |
|-------------------------|--------------------------|
| a. Primary succession | c. Pioneer succession |
| b. Secondary succession | d. Ecological succession |
37. The hollowed-out interiors of these dead cells become passages for transporting dissolved nutrients to other parts of the tree. PS.02.02.03
- | | |
|--------------|-----------------|
| a. Xylem | c. Collenchymas |
| b. Epidermis | d. Tracheids |
38. This is a method of propagating plants asexually by reproducing entire plants from a single plant cell. PS.02.02
- | | |
|---------------------|-------------|
| a. Tissue culture | c. Layering |
| b. Sprouting method | d. Division |
39. Which of the following trees has bipinnately compound leaves? NRS.01.02.01
- | | |
|--------------|------------------|
| a. Hickories | c. Yellow Poplar |
| b. Mesquites | d. Pecan |
40. This oval shaped structure contains the hereditary material through which a living organism passes its traits to its offspring. PS.02.02
- | | |
|---------------|-----------------|
| a. Cytoplasm | c. Nucleus |
| b. Golgi Body | d. Mitochondria |
41. These soils are high in calcium, magnesium, sodium and potassium and support oaks, hickories, Ponderosa pine and Lodgepole pine. NRS.01.05
- | | |
|-------------|--------------|
| a. Humus | c. Spodosols |
| b. Ultisols | d. Alfisols |

42. Heart rot is a type of ____ which is also a ____ disease. PS.03.03.01
- a. White rot, biotic
 - b. White rot, abiotic
 - c. Brown rot, biotic
 - d. Brown rot, abiotic
43. How many cords of wood are in a stack of wood 16' long by 6' high by 4' wide?
NRS.02.04.01
- a. 1.76
 - b. 2.3
 - c. 3.0
 - d. 3.2
44. This tree is considered the densest of all trees in North America. NRS.01.02.01
- a. Pignut hickory
 - b. Black walnut
 - c. Black oak
 - d. Pecan
45. The actual size of a 2" x 8" piece of lumber is ____ . NRS.02.04.01
- a. 1 ¼" x 7 ½"
 - b. 1 ½" x 7 ¼"
 - c. 1 ¼" x 7 ¼"
 - d. 1 ½" x 7 ½"
46. This process creates the highest yield of paper but the lowest paper strength. NRS.02.04.01
- a. Chemical pulping
 - b. Semi chemical pulping
 - c. Mechanical pulping
 - d. Bleaching before pulping
47. Which of the following is NOT a basic assumption applied to partial cruises to ensure the accuracy of the results? ESS.01.02.02
- a. Teams of two cruisers work together, one taking measurements, one recording the data.
 - b. The sample must be representative of the entire forest.
 - c. Enough samples should be tallied to reduce the chance that errors will occur.
 - d. The plot size should be large enough to tally 15-20 trees per acre.
48. Which rule for scaling logs takes into account the amount of wood in the taper of the log from the small end to the large end? CS.06.04.02
- a. Scribner
 - b. Doyle
 - c. International
 - d. None of them
49. The rule of thumb for calculating the rate of spread is $R=W^2$. R=rate of spread and W=wind speed. If the wind is blowing 20 mph what is the rate of spread? NRS.04.04.01
- a. 40
 - b. 80
 - c. 200
 - d. 400
50. A type of cutting that is used to prevent the spread of a disease or insect problem to other vulnerable trees in an area is called _____. NRS.04.01
- a. Cleaning operation
 - b. Intermediate cutting
 - c. Salvage cutting
 - d. Sanitation cutting

**2017 National FFA Forestry
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- | | |
|-------|-------|
| 1. D | 26. D |
| 2. D | 27. A |
| 3. A | 28. C |
| 4. B | 29. C |
| 5. D | 30. D |
| 6. B | 31. B |
| 7. C | 32. B |
| 8. B | 33. D |
| 9. C | 34. C |
| 10. B | 35. C |
| 11. D | 36. B |
| 12. C | 37. D |
| 13. D | 38. A |
| 14. A | 39. B |
| 15. A | 40. C |
| 16. D | 41. D |
| 17. D | 42. C |
| 18. D | 43. C |
| 19. A | 44. A |
| 20. D | 45. B |
| 21. A | 46. C |
| 22. C | 47. A |
| 23. B | 48. C |
| 24. D | 49. D |
| 25. A | 50. D |