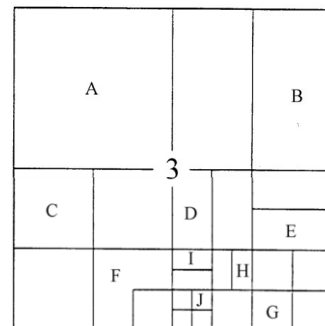


**2017 National FFA Forestry  
Career Development Event  
Knowledge Exam**

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
  - b. Pesticides
  - c. Illegal Killing
  - 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
  - b. Scaling
  - c. Siltation
  - d. Skidding
35. This is the most important source of biomass across the globe. NRS.02.04.03
- a. Agricultural crops
  - b. Crop residues
  - c. Forests
  - 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
  - b. Secondary succession
  - c. Pioneer 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
  - b. Epidermis
  - c. Collenchymas
  - 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
  - b. Sprouting method
  - c. Layering
  - d. Division
39. Which of the following trees has bipinnately compound leaves? NRS.01.02.01
- a. Hickories
  - b. Mesquites
  - c. Yellow Poplar
  - 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
  - b. Golgi Body
  - c. Nucleus
  - 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
  - b. Ultisols
  - c. Spodosols
  - 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  
Career Development Event  
Knowledge Exam Answer Key**

- |       |       |
|-------|-------|
| 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 |

**2018 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. An example of a job performed by a forester with a Bachelor of Science (undergraduate) degree is \_\_\_\_\_. (KI, p.38) CS.05.01.02.a
  - a. Research Scientist
  - b. Urban Forester
  - c. Forestry Technician
  - d. Fire Fighter
2. The smallest portion of timberlands in the United States belongs to \_\_\_\_\_. (KI, p.31) NRS.02.04.02.b
  - a. Private Landowners
  - b. Public Lands
  - c. Forest Industry
  - d. Wilderness Areas
3. Several layers of vegetation found in a forest is called the \_\_\_\_\_. (FS, p.6) NRS.01.05.01.b
  - a. Strata
  - b. Canopy
  - c. Herb layer
  - d. Shrubs
4. An example of a nonrenewable resource is \_\_\_\_\_. (FS, p.11) PST.01.01.01.a
  - a. Forest
  - b. Wildlife
  - c. Coal
  - d. Crops
5. \_\_\_\_\_ are considered to be better sources for fuelwood. (FS,p.15) PST.01.01.01.a
  - a. Softwoods
  - b. Hardwoods
  - c. Low-density woods
  - d. Medium density woods
6. \_\_\_\_\_ is the movement and removal of soil caused by human and animal activities, or catastrophic natural events. (KI, p. 5) CS.04.01.01.b
  - a. Erosion
  - b. Natural Erosion
  - c. Accelerated Erosion
  - d. Soil Degradation
7. \_\_\_\_\_ is an obligate parasite, and while trees usually do not die from the infestation, their growth is restricted. (KI, p.129) NRS 04.02.01.a
  - a. Slime Flux
  - b. Rust
  - c. Nematode
  - d. Heart Rot
8. Which is not a degree of relative crown density? (FF, p. 123) NRS.01.05.01.b
  - a. Thin
  - b. Closed
  - c. Open
  - d. Partial
9. What is the rotating ring on a compass, graduated from zero to 360 degrees, and labeled with cardinal directions and quadrants called? (KI, p. 7) NRS.03.02.01.a
  - a. Dial
  - b. Bezel
  - c. Hozzle
  - d. Ring

10. Which tree species produce achene fruit? (KI, p.75) NRS.01.02.01.b
- a. Ash
  - b. Sycamore
  - c. Black Cherry
  - d. Black Walnut
11. The \_\_\_\_\_ is sometimes known as the boreal forest. (FS,p.28) NRS.01.05.03.c
- a. Northern Hardwoods Forest
  - b. Pacific Coast Forest
  - c. Bottomland Hardwood Forest
  - d. Northern Coniferous Forest
12. A \_\_\_\_\_ is formed through meiosis consists of one chromatid from each original chromosome pair. (FS, p.119) PS.02.02.01.b
- a. Haploid cell
  - b. Diploid cell
  - c. Tetrad cell
  - d. Mother cell
13. A forest that has been regenerated from the roots, stumps, or branches of other trees is known as a \_\_\_\_\_. (FS,p.122) NRS.01.01.01c
- a. High forest
  - b. Low forest
  - c. Bottom forest
  - d. Canopy forest
14. Which of the following DOES NOT influence the color of soil? (FS,p.136) CS.04.01.01.b
- a. Amount of organic matter
  - b. Drainage of the soil
  - c. Minerals in the soil
  - d. Amount of silt
15. Illuviation, the buildup of translocated soil components, is located in the \_\_\_\_\_. (FS,p.139) CS.04.01.01.b
- a. A soil horizon
  - b. B soil horizon
  - c. C soil horizon
  - d. E soil horizon
16. Pulpwood being processed for paper is debarked then chipped into pieces about \_\_\_\_\_ in size. (KI, p. 34) CS.02.02.02c
- a. 1
  - b. 2
  - c. 3
  - d. 4
17. The price of timber sold may be established in all except? (FF, p. 200) NRS.02.04.02.b
- a. Diameter
  - b. Tree Scale
  - c. Load Scale
  - d. Lump Sum
18. To use the \_\_\_\_\_, a forester pushes or drives the cutting edge through the bark until it reaches wood, then pushes the guard against the tree or log for a measurement. (KI, p.93) ESS.01.02.02.a
- a. Bark Gauge
  - b. Increment Borer
  - c. Tree Caliper
  - d. Soil Auger

19. Which of the following is not considered a natural firebreak? (FF, p. 320) NRS.04.04.01.b
- a. Streams
  - b. Logging Roads
  - c. Wind breaks
  - d. Highways
20. A complete soil profile includes these horizons in what order? (FS,p.139) CS.04.01.01.b
- a. A,B,C,E,O,R
  - b. B,A,C,O,E,R
  - c. O,A,E,B,C,R
  - d. R,O,A,C,E,B
21. \_\_\_\_\_ are responsible for heart rot. (FS,p.159) NRS.04.02.01.a
- a. Bacteria
  - b. Fungi
  - c. Viruses
  - d. Microplasmas
22. \_\_\_\_\_ include damage caused to trees by conditions such as drought, heat, cold and other conditions, they are not contagious, but they may affect large number of trees in an area. (FS,p.166) NRS.04.02.01.a
- a. Abiotic diseases
  - b. Biotic diseases
  - c. Fungus
  - d. Parasites
23. \_\_\_\_\_ is a method of controlling harmful insects and is proving to be a more practical approach to insect control.(FS,p.181) NRS.04.03.01.a
- a. Mechanical control
  - b. Chemical control
  - c. Genetic engineering
  - d. Integrated pest management
24. What causes the largest impact to species that have been listed on the threatened and endangered list?(FS,p.202) NRS.03.01.07.a
- a. Regulated hunting
  - b. Illegal killing
  - c. Landscape alteration
  - d. Competition from introduced species
25. \_\_\_\_\_ maps are color-enhanced photographic images that show land features. (KI, p.141) NRS.03.02.01.a
- a. Orthophoto
  - b. Physical
  - c. Relief
  - d. Road
26. Which species of wood does not have the most notable effects of spalting? (KI, p. 48) NRS.02.04.01.a
- a. Red Maple
  - b. Black Birch
  - c. American Beech
  - d. Yellow Poplar
27. Which species has the highest heating value per standard green cord? (FF, p. 371) PST.01.01.01a
- a. Hickory
  - b. White Oak
  - c. Red Maple
  - d. Eastern Cottonwood
28. The major commercial use for mushrooms is \_\_\_\_\_. (KI, p. 51) NRS.02.04.01.a
- a. Toxin control
  - b. Dyes for textiles
  - c. Medical Research
  - d. Food

29. Magnetic North is continually shifting, so a compass must be adjusted using \_\_\_\_\_ / \_\_\_\_\_ declination. (KI, p. 146) NRS.03.02.01.a
- a. North / South
  - b. East / West
  - c. South / West
  - d. North / West
30. The \_\_\_\_\_ is made up of trees, shrubs, and vines growing beneath the canopy. (KI, p. 60) NRS.01.05.03.c
- a. Emergent Layer
  - b. Canopy Layer
  - c. Understory Layer
  - d. Forest Floor
31. Some kinds of plants maintain their dominance over other plants by releasing chemicals into the area close around them that provide small doses of poison to invading plants. This is called \_\_\_\_\_. (FS,p.221) NRS.01.05.03.c
- a. Allelopathic effect
  - b. Adaptive behavior
  - c. Carbonization process
  - d. Dendrification
32. The first priority in any fire suppression effort is \_\_\_\_\_. (FS,p.294) NRS.04.04.01.b
- a. Fire crew safety
  - b. Evaluating the value of recourses threatened
  - c. Evaluating the availability of firefighting resources
  - d. Deciding whether to suppress the fire or letting it burn
33. Which of the following terms best describes the mode of action of a firefighter who is setting backfires during a wildfire? (FS,p.297) NRS.04.04.01.b
- a. Direct attack
  - b. Incendiarism
  - c. Indirect attack
  - d. Prescribed burn
34. Resin ducts are openings in the wood through which resin moves within a live tree. They are present in \_\_\_\_\_.(FS,p.331) PS.02.02.03.a
- a. Softwoods
  - b. Hardwoods
  - c. Heartwood
  - d. Sapwood
35. The density of wood depends on the ratio of \_\_\_\_\_ to the volume of wood. (FS,p.331) PS.02.02.03.a
- a. Weight of wood
  - b. Cell wall material
  - c. Texture of wood
  - d. Plant vascular tissue
36. \_\_\_\_\_ is site preparation that effectively clears a site of unwanted vegetation and woody debris with minimal soil disturbance. (KI, p.107) NRS.03.01.01.c
- a. Chemical
  - b. Mechanical
  - c. Prescribed Burning
  - d. Clearcutting
37. \_\_\_\_\_ is a lengthwise separation of the wood, which usually extends across the rings of annual growth, commonly resulting from stresses set up in wood during seasoning. (FF, p. 460) PS.02.02.03.a
- a. Cant
  - b. Catface
  - c. Check
  - d. Conk

38. Trees directly influence the yield of a watershed by extracting water from the soil by \_\_\_\_\_. (KI, p. 63) PS.01.01.03.b
- a. Osmosis
  - b. Diffusion
  - c. Capillary Action
  - d. Transpiration
39. \_\_\_\_\_ thinning is useful in plantations because of their planting layout of rows and space within the row. (KI, p.109) NRS.03.01.01.c
- a. Geometric
  - b. Commercial
  - c. Pre-commercial
  - d. Crown
40. If a sample plot is  $\frac{1}{4}$  acre in size, what is the plot radius? (KI, p. 147) ESS.05.01.01.c
- a. 37.25 feet
  - b. 52.7 feet
  - c. 58.9 feet
  - d. 66 feet
41. Windbreaks should be long in relation to their height; a \_\_\_\_\_ ratio is recommended. (KI, p. 63) NRS.04.01.02.c
- a. 2:1
  - b. 5:1
  - c. 10:1
  - d. 12:1
42. The \_\_\_\_\_ migrated to the United States from France, and now infests white and red oak trees in the Northeast. (KI, p.121) NRS.04.03.01.a
- a. Tent Caterpillar
  - b. Gypsy Moth
  - c. Douglas Fir Tussock Moth
  - d. Spruce Budworm
43. Which of the following snakes is not a pit viper? (KI, p. 163) NRS.01.02.03.b
- a. Rattlesnake
  - b. Cottonmouth
  - c. Copperhead
  - d. Coral Snakes
44. Which of the following is not a characteristic of an angiosperm? (KI, p. 70) NRS.01.02.01.b
- a. Broadleaves
  - b. Dry or Fleshy Fruit
  - c. Dendritic
  - d. Resin Ducts
45. According to OSHA, ear muffs or plugs are required for workers exposed to \_\_\_\_\_ decibels per hour or higher. (KI, p. 166) CS.03.04.01.a
- a. 75
  - b. 85
  - c. 95
  - d. 105
46. Which species and bark type is incorrect? (KI, p. 74) NRS.01.02.01.b
- a. American Beech – Smooth
  - b. Eastern White Pine – Scaly
  - c. Hickory – Blocky
  - d. Black Oak – Furrowed
47. How many seedlings are needed to plant 10 acres at 6' x 8'? (FF, p.175) NRS.04.01.02.c
- a. 480
  - b. 9075
  - c. 10000
  - d. 210

48. \_\_\_\_\_ is a chemical that kills fungi or prevents them from causing diseases, usually on plants of economic importance. (FF, p. 465) NRS.04.02.01.a

- a. Pesticide
- b. Fungicide
- c. Insecticide
- d. Rodenticide

49. Axial parenchyma cells originate from the \_\_\_\_\_ forming a network of living cells around the tree. They transport sugars (food) to the parenchyma cells within the growth ring, and they store starch. PS.02.02.01.c

- a. Heartwood
- b. Cambium
- c. Sapwood
- d. Seriate

50. \_\_\_\_\_ are unthickened portions of cell walls through which sap passes from ray cells to fibers, or vice versa. (FF, p. 229) PS.02.02.01.c

- a. Bordered Pits
- b. Medullary Rays
- c. Vertical Resin Duct
- d. Simple Pits

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Burton, L. D. 2000. Introduction to Forestry Science. Delmar. (FS)  
Rolfe, G. L., Edgington, J., Holland, I., & Fortenberry, G. 2003. Forests and Forestry. Interstate Publishing. (FF)

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



## **2019 Forestry Career Development Event**

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

### **KNOWLEDGE EXAM**

1. How many square feet are in 2.5 acres?
  - A. 25,000
  - B. 43,560
  - C. 87,120
  - D. 108,900
  
2. When felling a tree, a \_\_\_\_\_ removes a wedge of wood from the side where the logger wants the tree to fall.
  - A. Back cut
  - B. Over cut
  - C. Undercut
  - D. Front cut
  
3. Name the regeneration system where mature timber is removed, usually the oldest or largest trees, either as single scattered trees or in small groups at relatively short intervals, commonly 5 to 20 years.
  - A. Selection
  - B. Clearcut
  - C. Seed Tree
  - D. Shelterwood
  
4. If Mr. Fletcher plans to plant 50 acres of Longleaf Pine seedlings on 8 feet x 10 feet intervals. How many seedlings per acre will Mr. Fletcher plant?
  - A. 96
  - B. 432
  - C. 454
  - D. 545

5. What part of a timber sale contract depends upon the property boundaries?
  - A. Preamble
  - B. Description of sale area
  - C. Conditions of payment
  - D. Designation of which trees to cut
  
6. Which of the following is not a surface-rooted species?
  - A. Birch
  - B. Lodgepole Pine
  - C. Hickory
  - D. Hemlock
  
7. The process of consuming carbohydrates and oxygen to obtain energy for the biological processes of life support, growth, and reproduction is called \_\_\_\_\_.
  - A. Photosynthesis
  - B. Respiration
  - C. Transpiration
  - D. Oxidation
  
8. If the male and female flower parts occur in separate flowers on the same tree, the species is said to be \_\_\_\_\_.
  - A. Dioecious
  - B. Monoecious
  - C. Carpellate
  - D. Angiosperms
  
9. If you are traveling an azimuth of 265, you are headed in a \_\_\_\_\_ direction.
  - A. Northwest
  - B. Northeast
  - C. Southeast
  - D. Southwest

10. Which of the following is a common leaf form?
- A. Dentate
  - B. Incised
  - C. Truncate
  - D. Lanceolate
11. What is the form class of a tree 16 inches in dbh and 12 inches in diameter inside bark at the top of the first 16-foot log?
- A. 75
  - B. .075
  - C. 1.33
  - D. 133
12. \_\_\_\_\_ is a method in which the performance of a genotype is tested over a geographic range.
- A. Genetic engineering
  - B. Progeny testing
  - C. Provenance testing
  - D. Clone testing
13. \_\_\_\_\_ are the fastest spreading of all types of fires.
- A. Crown fires
  - B. Ground fires
  - C. Surface fires
  - D. None of the above
14. Length of darkness influences plant growth. This is known as \_\_\_\_\_.
- A. Geotropism
  - B. Thermotropism
  - C. Photoperiodism
  - D. Light Intensity
15. Which of the following is not a type of veneer?
- A. Sawed
  - B. Scraped
  - C. Sliced
  - D. Rotary Cut

16. Several layers of vegetation found in a forest is called the \_\_\_\_\_.  
A. Strata  
B. Canopy  
C. Herb layer  
D. Shrubs
17. \_\_\_\_\_ rule assumes 1-inch boards and  $\frac{1}{4}$  inch kerf, makes a liberal allowance for slabs, and disregards taper.  
A. International Rule  
B. Doyle-Scribner Rule  
C. Doyle Rule  
D. Scribner Rule
18. For which of the following would a fungicide be used?  
A. Aphid  
B. Slime Flux  
C. Heart Rot  
D. Nematode
19. When fuel burns, it reacts with oxygen from the surrounding air releasing heat and generating  
A. Pyrophoric  
B. Pyrolysis  
C. Oxidation  
D. Deflagration
20. \_\_\_\_\_ are considered to be better sources for fuelwood.  
A. Softwoods  
B. Hardwoods  
C. Low-density woods  
D. Medium density woods
21. Which of the following is an accurate portrayal of the stages of succession?  
A. Perennials, annual weeds, shrubs, young trees  
B. Annual weeds, shrubs, perennials, young trees  
C. Annual weeds, young trees, shrubs, perennials  
D. Annual weeds, perennials, shrubs, young trees

22. \_\_\_\_\_ is a small leaf like appendage to a leaf, typically borne in pairs at the base of the leaf stalk.
- A. Stipule
  - B. Petiole
  - C. Axillary Bud
  - D. Lenticel
23. When \_\_\_\_\_ occurs the seed breaks dormancy and begins to sprout.
- A. Fertilization
  - B. Pollination
  - C. Germination
  - D. Asexual Reproduction
24. In the rectangle survey system developed by Thomas Jefferson, \_\_\_\_\_ run north to south.
- A. Principal Meridians
  - B. Primary Meridians
  - C. Secondary Meridians
  - D. Guide Meridians
25. \_\_\_\_\_ is a cell structure that gathers excess water and wastes that are discharged through the cell wall.
- A. Mitochondrion
  - B. Golgi Apparatus
  - C. Chloroplast
  - D. Vacuole
26. A sapling is a tree that is more than \_\_\_\_\_ in height and up to \_\_\_\_\_ in diameter.
- A. 2', 3"
  - B. 3', 6"
  - C. 3', 4"
  - D. 1', 2"

27. How many board feet are present in a 2 inch thick, 12 inch wide, and 144 inch long board?
- A. 24
  - B. 288
  - C. 144
  - D. 32
28. An anther is a plant structure found on/in the \_\_\_\_\_.
- A. Leaf
  - B. Flower
  - C. Stem
  - D. Root
29. The first plants to grow naturally in a burned or cleared area are called \_\_\_\_\_.
- A. Softwoods
  - B. Pioneers
  - C. Hardwoods
  - D. Shrubs
30. A dicot has \_\_\_\_\_ cotyledon(s).
- A. One
  - B. Two
  - C. Three
  - D. None
31. Which of the following is not correct?
- A. Sycamores as aggregate fruit
  - B. Pines have cones
  - C. Maples have samaras
  - D. Oaks as indehiscent
32. John's step factor is 2.86 feet. How many steps does John take to measure a distance of 100 feet?
- A. 40
  - B. 39
  - C. 35
  - D. 34

33. The scientific name for Chestnut Oak is....
- A. Quercus velutina
  - B. Quercus alba
  - C. Quercus rubra
  - D. Qurercus montana
34. \_\_\_\_\_ is lumber sawn in the horizontal plane, or end surface, of a log.
- A. Plain-sawn wood
  - B. Quarter-sawn wood
  - C. Endgrained-sawn wood
  - D. None of the above
35. A \_\_\_\_\_ is formed through meiosis consists of one chromatid from each original chromosome pair.
- A. Haploid cell
  - B. Diploid cell
  - C. Tetrad cell
  - D. Mother cell
36. Pulpwood being processed for paper is debarked then chipped into pieces about \_\_\_\_\_ in size.
- A. 1
  - B. 2
  - C. 3
  - D. 4
37. To use the \_\_\_\_\_, a forester pushes or drives the cutting edge through the bark until it reaches wood, then pushes the guard against the tree or log for a measurement.
- A. Bark Gauge
  - B. Increment Borer
  - C. Tree Caliper
  - D. Soil Auger

38. A complete soil profile includes these horizons in what order?
- A. A,B,C,E,O,R
  - B. B,A,C,O,E,R
  - C. O,A,E,B,C,R
  - D. R,O,A,C,E,B
39. \_\_\_\_\_ maps are color-enhanced photographic images that show land features.
- A. Orthophoto
  - B. Physical
  - C. Relief
  - D. Road
40. Some kinds of plants maintain their dominance over other plants by releasing chemicals into the area close around them that provide small doses of poison to invading plants. This is called \_\_\_\_\_.
- A. Allelopathic effect
  - B. Adaptive behavior
  - C. Carbonization process
  - D. Dendrification
41. The degree of acidity or alkalinity of a soil is expressed in pH values. Which of the following pH values is most acidic?
- A. 8.5
  - B. 7.0
  - C. 5.5
  - D. 4.0
42. \_\_\_\_\_ is a lengthwise separation of the wood, which usually extends across the rings of annual growth, commonly resulting from stresses set up in wood during seasoning.
- A. Cant
  - B. Catface
  - C. Check
  - D. Conk

43. You tally 9 trees using a 10 factor wedge prism within a plot. What is the basal area in square feet per acre of the trees around that point?
- A. 0.9
  - B. 9
  - C. 90
  - D. 10
44. If  $\text{Area} = \pi \times \text{radius}^2$ , then what is the plot radius for 1/5 acre?
- A. 37.25 feet
  - B. 52.6 feet
  - C. 58.9 feet
  - D. 66 feet
45. Which specie and bark type is incorrect?
- A. American Beech – Smooth
  - B. Eastern White Pine – Blocky
  - C. Hickory – Furrowed
  - D. Black Oak – Furrowed
46. Assume that a cord of firewood costs \$150, how much would a stack of wood measuring 4' x 4' x 16' cost?
- A. \$75
  - B. \$150
  - C. \$300
  - D. \$450
47. How many sections are there in a township?
- A. 1
  - B. 36
  - C. 640
  - D. 43,560
48. . \_\_\_\_\_ is the capacity of a tree to develop and grow in the shade while in competition with other trees.
- A. Tracheids
  - B. Reproduction
  - C. Toughness
  - D. Tolerance

49. \_\_\_\_ a reconstituted board containing a high percentage of wood shaving in the central core with layers of wood flakes on either side of the core and fine sawdust near the surface.
- A. Particleboard
  - B. OSB
  - C. Fiberboard
  - D. Hardboard
50. Axial parenchyma cells originate from the cambium forming a network of \_\_\_\_\_ cells around the tree. They transport sugars (food) to the parenchyma cells within the growth ring, and they store starch.
- A. Living
  - B. Dead
  - C. Segmented
  - D. Guard



## 2019 Forestry Career Development Event

### KNOWLEDGE EXAM KEY

Question	Answer	Point Value	Standard
1	D	2	NRS.03.02.01.a
2	C	2	CS.03.04.02.c
3	A	2	NRS.01.01.01.c
4	D	2	NRS.01.05.03.c
5	B	2	NRS.01.05.03.c
6	C	2	CS.03.04.03.b
7	B	2	PS.02.03.02.a
8	B	2	PS.02.02.05.b
9	D	2	NRS.03.02.01.a
10	D	2	PS.02.01.01.a
11	A	2	NRS.01.02.06.c
12	C	2	PS.03.01.05.b
13	A	2	NRS.04.04.01.b
14	C	2	PS.01.01.01.b
15	B	2	NRS.02.04.01.a
16	A	2	NRS.01.05.01.b
17	D	2	CS.03.04.02.c
18	C	2	NRS.04.02.01.c
19	C	2	NRS.04.01.01.b
20	B	2	PST.01.01.01.a
21	D	2	NRS.01.05.01.b
22	A	2	PS.02.02.03.a
23	C	2	PS.02.02.06.a
24	A	2	ESS.05.01.01.c
25	D	2	PS.02.02.01.c
26	C	2	NRS.01.02.06.c
27	A	2	NRS.03.01.01.c
28	B	2	CS.03.04.02.c
29	B	2	NRS.01.05.01.b
30	B	2	PS.02.02.04.a
31	A	2	PS.02.02.06.b.
32	C	2	NRS.03.02.01.a
33	D	2	PS.02.01.01.a
34	C	2	CS.03.04.03.b
35	A	2	PS.02.02.01.b
36	A	2	NRS.02.04.01.a
37	A	2	CS.03.04.02.c

38	C	2	NRS.01.02.05.b
39	C	2	NRS.03.02.01.a
40	A	2	NRS.01.05.03.c
41	D	2	NRS.01.02.05.b
42	C	2	PS.02.02.03.a
43	C	2	NRS.01.02.06.c
44	B	2	ESS.05.01.01.c
45	B	2	NRS.01.02.01.b
46	C	2	NRS.03.01.01.c
47	B	2	NRS.03.02.01.a
48	D	2	PS.01.01.01.b
49	A	2	NRS.02.04.01.a
50	A	2	PS.02.02.01.c



## 2021 National FFA Forestry General Knowledge Exam

1. Which soil type holds the least amount of water?
  - a. clay
  - b. sand
  - c. loam
  - d. sandy loam
2. A half-section of land contains \_\_\_\_ acres.
  - a. 40
  - b. 80
  - c. 160
  - d. 320
3. The DBH range of trees in sapling stands is:
  - a. 0" - 5"
  - b. 5" - 10"
  - c. 10" - 15"
  - d. none of the above
4. A block of wood 4 inches thick by 6 inches wide and 12 inches long contains \_\_\_\_ board feet of wood volume.
  - a. one
  - b. two
  - c. three
  - d. four
5. Trees that have the largest crowns and are taller than other trees in the stand are called \_\_\_\_\_ trees.
  - a. intermediate
  - b. co-dominant
  - c. suppressed
  - d. dominant
6. Which one of the following species has opposite leaf arrangement?
  - a. oak
  - b. maple
  - c. hickory
  - d. sycamore
7. The tree tissue responsible for transporting food made in the leaves to the roots is called:
  - a. xylem
  - b. cambium
  - c. phloem
  - d. bark
8. What two measurements are needed to determine the site index of a stand?
  - a. age and DBH
  - b. height and DBH
  - c. DBH and soil index
  - d. age and height
  - e.

9. The proper distance one should hold a Biltmore stick from their eye is \_\_\_\_ inches.
- a. 15
  - b. 20
  - c. 25
  - d. 30
10. Name the regeneration system where healthy, large-crowned trees are scattered throughout the harvested area to provide seed for the next forest stand.
- a. clearcut
  - b. shelterwood
  - c. seed tree
  - d. single-tree
11. How many seedlings will be planted on one acre at a spacing of 10'x10'?
- a. 302
  - b. 436
  - c. 889
  - d. 1,742
12. A hypsometer measures:
- a. soil moisture
  - b. tree volume
  - c. tree diameter
  - d. tree height
13. The study of forest diseases is called:
- a. dendrology
  - b. forest pathology
  - c. forest entomology
  - d. forest hydrology
14. Log grade is NOT determined by which factor?
- a. length
  - b. diameter
  - c. defects
  - d. age
15. What are the dimensions for a standard cord of wood?
- a. 2 feet high x 4 feet wide x 8 feet long
  - b. 4 feet high x 4 feet wide x 8 feet long
  - c. 4 feet high x 2 feet wide x 8 feet long
  - d. 4 feet high x 4 feet wide x 4 feet long
16. The term that describes the decreasing size in a tree's diameter as one travels up the stem.
- a. taper
  - b. sweep
  - c. wane
  - d. lean
17. The best time to regenerate a forest by hand or machine planting is:
- a. late fall or winter
  - b. late winter or early spring
  - c. spring
  - d. summer

18. A person took a total of 80 paces to travel a 100-foot distance four times. What is the person's pace length?
- a. 5.0 feet
  - b. 5.5 feet
  - c. 6.0 feet
  - d. 6.5 feet
19. DBH refers to a height \_\_\_ inches from the ground:
- a. 42
  - b. 48
  - c. 54
  - d. 60
20. Pulpwood is the term used for wood primarily cut for what product?
- a. firewood
  - b. veneer
  - c. lumber
  - d. paper products
21. Creosote, Penta, CCA and copper naphthenate are all chemicals which have been used in:
- a. making paper
  - b. preserving wood
  - c. herbicides
  - d. insecticides
22. Drupe, pome, achene, and samara all refer to:
- a. tree flowering
  - b. tree fruit
  - c. tree leaves
  - d. tree orders
23. Science dealing with the measurement of volume, growth and development of individual trees and stands, and the determination of the various products obtainable from them is:
- a. silviculture
  - b. ecology
  - c. pathology
  - d. mensuration
24. Mounds of soil used to divert run-off water off woods roads are called:
- a. road terraces
  - b. water bars
  - c. high boys
  - d. diversion ditches
25. The angular difference between magnetic north and true north is called what?
- a. bearing
  - b. azimuth
  - c. declination
  - d. none of the above
26. What part of a timber sale contract depends upon the property boundaries?
- a. Preamble
  - b. Description of sale area
  - c. Conditions of payment
  - d. Designation of which trees to cut

27. If you are traveling an azimuth of 135, you are headed in a \_\_\_\_\_ direction.
- |              |              |
|--------------|--------------|
| a. Northwest | c. Southeast |
| b. Northeast | d. Southwest |
28. What is the form class of a tree 18 inches in dbh and 15 inches in diameter inside bark at the top of the first 16-foot log?
- |         |         |
|---------|---------|
| a. 83   | c. 1.20 |
| b. .083 | d. .120 |
29. Which specie and bark type is incorrect?
- |                               |                        |
|-------------------------------|------------------------|
| a. American Beech – Smooth    | c. Birch - Plated      |
| b. Eastern White Pine – Scaly | d. Black Oak –Furrowed |
30. An insect that belongs to the coleoptera order, and feeds on plant and animal matter.
- |                |                         |
|----------------|-------------------------|
| a. Gypsy Moth  | c. Southern Pine Beetle |
| b. Pine Sawfly | d. Cicadas              |
31. Which of the following is NOT an angiosperm?
- |         |            |
|---------|------------|
| a. Oaks | c. Firs    |
| b. Elms | d. Hickory |
32. \_\_\_\_\_ - leaflets are laterally attached along each side of the rachis. Example: Hickory.
- |                       |                         |
|-----------------------|-------------------------|
| a. Palmately Compound | c. Bipinnately Compound |
| b. Pinnately Compound | d. Simple               |
33. The standard scale for a 7.5 minute topo map is \_\_\_\_\_.
- |              |                      |
|--------------|----------------------|
| a. 1:24,000  | c. 1:63,360          |
| b. 1:250,000 | d. none of the above |
34. The sum of the plot area sampled should represent \_\_\_\_\_ percent of the total area of tracts under 300 acres.
- |       |       |
|-------|-------|
| a. 50 | c. 30 |
| b. 40 | d. 20 |
35. The sale of timber creates capital gains income.
- |          |
|----------|
| a. True  |
| b. False |

36. \_\_\_\_\_ and \_\_\_\_\_ are the main constituents of wood.
- a. carbohydrates / starches
  - b. starches / cellulose
  - c. cellulose / carbohydrates
  - d. lignin / cellulose
37. The type of fruit produced by a tree is determined by the nature of the \_\_\_\_\_.
- a. leaf
  - b. bark
  - c. ovary
  - d. root system
38. What is the correct order?
- a. Class, Genus, Species, Order
  - b. Order, Species, Genus, Class
  - c. Family, Genus, Species, Kingdom
  - d. Order, Family, Genus, Species
39. Which of the following is NOT a biological factor affecting a tree's environment?
- a. Pyric Activity
  - b. Fungi
  - c. Small animal life
  - d. Microorganisms
40. Broadleaf trees generally represent which of the following strata in a forest?
- a. canopy
  - b. herb layer
  - c. understory
  - d. shrub layer
41. The population of plants that occupies an environment when the succession of plant species is complete and the plant population has stabilized is known as a:
- a. terminal forest
  - b. pioneer species
  - c. climax community
  - d. boreal forest
42. A permeable structure found in plant cells that restrict the kind of materials that can enter a cell is the:
- a. nucleoplasm
  - b. cell membrane
  - c. cell wall
  - d. vacuole
43. A high-energy molecule that is formed during the first light reaction of photosynthesis is:
- a. NADPH
  - b. ATP
  - c. cellulose
  - d. chlorophyll

44. Which of the following natural cycles is NOT an elemental cycle?
- a. carbon cycle
  - b. nitrogen cycle
  - c. water cycle
  - d. oxygen cycle
45. A fruiting body is:
- a. a structure that produces spores that develop into fungi
  - b. a fleshy structure that surrounds the seeds of a plant
  - c. a thin strand of fungal tissue that enters tree roots, infecting them with disease organisms
  - d. a structure on a tree leaf in which sap become fermented to produce honeydew
46. Some kinds of plant release chemicals into the area close around them that provide small doses of poison to young plants that invade their territory. This defensive plant response is known as:
- a. germicide
  - b. herbicide
  - c. allelopathic effect
  - d. chemical warfare
47. A timber harvest operation in which entire trees are processed in the forest to produce biomass is called:
- a. debarking
  - b. bucking
  - c. chaining
  - d. chipping
48. A firestorm is caused by:
- a. ash that has drifted down from the atmosphere above the fire
  - b. a thunderstorm
  - c. erratic winds that move the fire into the forest canopy where there is plenty of fuel
  - d. lightning strikes
49. A pulping process in which wood fibers are separated by dissolving the lignin that cements them together is called:
- a. hydra pulping
  - b. chemical pulping
  - c. mechanical pulping
  - d. disk refining
50. A tensiometer is an instrument that is used to:
- a. calculate the strength of a tree
  - b. measure the purity of irrigation water by testing the surface tension of water
  - c. estimate the flexibility of tree limbs
  - d. measure the water content of soil



# CAREER DEVELOPMENT EVENT

Created: Aug-22

## Knowledge Exam Key

Question	Answer	Point	Standard
1.	B	2	CS.04.01
2.	D	2	ESS.05.01
3.	A	2	NRS.01.02
4.	B	2	NRS.01.02
5.	D	2	NRS.01.05
6.	B	2	NRS.01.02
7.	C	2	PS.02.02
8.	D	2	NRS.01.02
9.	C	2	ESS.01.02
10.	C	2	NRS.01.05
11.	B	2	NRS.01.02
12.	D	2	CS.03.04
13.	B	2	NRS.04.03
14.	D	2	NRS.01.02
15.	B	2	NRS.01.02
16.	A	2	NRS.01.02
17.	A	2	NRS.03.01
18.	A	2	ESS.05.01
19.	C	2	NRS.01.02
20.	D	2	NRS.01.05
21.	B	2	NRS.02.04
22.	B	2	NRS.01.02
23.	D	2	ESS.05.01
24.	B	2	NRS.01.01
25.	C	2	ESS.05.01
26.	B	2	NRS.02.04
27.	C	2	ESS.05.01
28.	A	2	NRS.01.02

Question	Answer	Point	Standard
29.	C	2	NRS.01.02
30.	C	2	NRS.01.02
31.	C	2	NRS.01.02
32.	B	2	NRS.01.02
33.	A	2	ESS.05.01
34.	D	2	NRS.01.02
35.	A	2	NRS.02.04
36.	D	2	PS.02.02
37.	C	2	PS.02.02
38.	D	2	PS.02.02
39.	A	2	NRS.01.05
40.	A	2	NRS.01.05
41.	C	2	PS.02.02
42.	B	2	PS.02.02
43.	B	2	CS.06.01
44.	C	2	PS.02.02
45.	A	2	NRS.04.03
46.	C	2	NRS.03.01
47.	D	2	NRS.04.04
48.	A	2	NRS.02.04
49.	B	2	NRS.02.04
50.	D	2	CS.03.04

2022 National FFA Forestry CDE Knowledge Exam B

1. Pick the correct definition of habitat structure?
  - a. Characteristics of the natural environment such as sunlight, temperature, moisture, and wind
  - b. Physical characteristics of the natural environment, such as how many trees there are, how tall they are, and what species they are
  - c. The shrubs, young trees, and plants near the forest floor
  - d. Animal or plant species that live in areas that have just had a large disturbance that removed much of the canopy, such as an extreme weather event like a windstorm or a clear-cut timber harvest
2. What job title is being described?  
A(n) \_\_\_\_\_ Samples water from a stream to make sure that it is safe.
  - a. Volunteer
  - b. Naturalist
  - c. Ecologist
  - d. Logger
3. What word matches this definition?  
The amount of sky obscured by the leaves and branches of the top layer of trees in the forest, measured as a percent.
  - a. Clear cut
  - b. Early successional
  - c. Ground cover
  - d. Canopy cover
4. The trunk of a tree is considered which of the following?
  - a. Internode
  - b. Bole
  - c. Crown
  - d. Root
5. Which of the following is false about cambium cells?
  - a. Cambium cells live between wood and bark cells and are visible only with a magnifying glass
  - b. Cambium growth widens tree trunks, limbs, and roots
  - c. Cambium cells divide forming wood cells toward the center of the tree and bark cells toward the outside
  - d. Cambium cells carry food made in the leaves to the twigs, branches, trunk, and roots
6. Which of the following is not an artificial reproductive method?
  - a. Pruning
  - b. Budding and Grafting
  - c. Cuttings
  - d. All of the above are artificial reproductive methods
7. Oxygenic photosynthesis occurs in the \_\_\_\_\_ located in the plant cell and absorbs blue and red wavelengths of lights.
  - a. Mitochondrion
  - b. Golgi Apparatus
  - c. Nucleus
  - d. Chloroplast

8. Axial parenchyma cells originate from the \_\_\_\_\_ forming a network of living cells around the tree. They transport sugars (food) to the parenchyma cells within the growth ring, and they store starch.
- Heartwood
  - Cambium
  - Sapwood
  - Seriate
9. A leaf \_\_\_\_\_ is the space or indentation between the lobes of a leaf blade.
- Sinus
  - Margin
  - Apex
  - Midrib
10. Which species of wood can be used to produce ax handles?
- Sycamore
  - White Birch
  - Bald Cypress
  - Hickory
11. Which of the following statements is not true about monocots?
- Monocot seeds have one cotyledon.
  - Monocot flower parts come in multiples of 4 and 5.
  - Monocot leaves have parallel venation.
  - Monocots have scattered vascular bundles in the stem.
12. Which of the following is an accurate portrayal of the stages of succession?
- Annual weeds, perennials, shrubs, young trees
  - Annual weeds, shrubs, perennials, young trees
  - Annual weeds, young trees, shrubs, perennials
  - Perennials, annual weeds, shrubs, young trees
13. Which is NOT a function of those plants growing next to the stream in a riparian forest buffer?
- Slow surface water runoff from farm fields 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.
14. 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?
- Scribner
  - Doyle
  - International
  - None of them
15. \_\_\_\_\_ is an obligate parasite, and while trees usually do not die from the infestation, their growth is restricted.
- Slime Flux
  - Rust
  - Nematode
  - Heart Rot

16. A \_\_\_\_\_ is formed through meiosis consisting of one chromatid from each original chromosome pair.
- Haploid cell
  - Diploid cell
  - Tetrad cell
  - Mother cell
17. Which of the following does not influence the color of soil?
- Amount of organic matter
  - Drainage of the soil
  - Minerals in the soil
  - Amount of silt
18. \_\_\_\_\_ include damage caused to trees by conditions such as drought, heat, cold and other conditions, they are not contagious, but they may affect a large number of trees in an area.
- Abiotic diseases
  - Biotic diseases
  - Fungus
  - Parasites
19. When felling a tree with a chainsaw the backcut \_\_\_\_\_.
- is placed below the undercut
  - should be placed on the same level as the undercut
  - should be level with the bottom of the open face notch
  - should cut straight through the notch
20. How many square feet are in 5.5 acres?
- 425,000
  - 243,560
  - 187,120
  - 239,580
21. Mr. Fletcher plans to plant 50 acres of Longleaf Pine seedlings on 8 feet x 10 feet intervals. How many seedlings per acre will Mr. Fletcher plant?
- 96
  - 432
  - 454
  - 545
22. If the male and female flower parts occur in separate flowers on the same tree, the species is said to be \_\_\_\_\_.
- |               |                |
|---------------|----------------|
| a. Dioecious  | c. Carpellate  |
| b. Monoecious | d. Angiosperms |
23. What is the form class of a tree 24 inches in dbh and 18 inches in diameter inside bark at the top of the first 16-foot log?
- 75
  - .075
  - 1.33
  - 133

24. Length of darkness influences plant growth. This is known as \_\_\_\_\_.  
a. Geotropism  
b. Thermotropism  
c. Photoperiodism  
d. Light Intensity
25. For which of the following would an insecticide be used?  
a. Aphid  
b. Slime Flux  
c. Heart Rot  
d. Nematode
26. In the rectangular survey system developed by Thomas Jefferson, \_\_\_\_\_ run north to south.  
a. Principal Meridians  
b. Primary Meridians  
c. Secondary Meridians  
d. Guide Meridians
27. How many board feet are present in 20 boards  $5/4$  inches thick, 12 inches wide, and 144 inches long?  
a. 24  
b. 300  
c. 3600  
d. 240
28. \_\_\_\_\_ is a lengthwise separation of the wood, which usually extends across the rings of annual growth, commonly resulting from stresses set up in wood during seasoning.  
a. Cant  
b. Catface  
c. Check  
d. Conk
29. You tally 8 trees using a 10 factor wedge prism within a plot. What is the basal area in square feet per acre of the trees around that point?  
a. 0.8  
b. 8  
c. 80  
d. 10
30. If  $\text{Area} = \pi \times \text{radius}^2$ , then what is the plot radius for  $1/10$  acre?  
a. 37.25 feet  
b. 52.6 feet  
c. 58.9 feet  
d. 66 feet
31. Which species and bark type is incorrect?  
a. American Beech – Smooth  
b. Eastern White Pine – Scaly  
c. Hickory – Warty  
d. Black Oak – Furrowed

32. Assume that a cord of firewood costs \$150, how much would a stack of wood measuring 4' x 4' x 14' cost?
- \$75
  - \$150
  - \$263
  - \$450
33. The best planting method for waterlogged soils is
- Pit planting
  - Mound planting
  - Berm planting
  - Dibble planting
34. Opposite of succession is called:
- Secondary succession
  - Tertiary succession
  - Retention
  - Retrogression
35. Which of the following is the correct way to write a legal description of a land Parcel:
- S 16, T4N, R2E, NE 1/4 of SE 1/4
  - R2E, S16, T4N, NW 1/4 of SW 1/4
  - NW 1/4 of SW 1/4, S16, T4N, R2E
  - NE 1/4 of Se 1/4, R2E, T4N, S16
36. A method of natural control of forest insect pests include(s):
- allowing predators of the insect to control them
  - logging the infested tree
  - spraying with insecticide after the trees are felled
  - none of the above
37. The distinctive feature of topographic maps is the \_\_\_\_\_.
- location of forest land
  - location of landmarks
  - location of roads and waterways
  - shape or contour of the land
38. The use of a counter (back) fire is what type of forest fire control?
- Direct
  - Indirect
  - Prescribed
  - Triangulation
39. The decline in value of a fixed asset due to wear and tear from use is called:
- Declination
  - Depletion
  - Depreciation
  - Diminishing returns
40. On a topographic map which of the following is a dark, heavy line with an elevation figure?
- contour index
  - contour interval
  - contour line
  - horizontal control station

41. An azimuth reading of 196 degrees would convert to a bearing of \_\_\_\_\_.  
a. 96 degrees south  
b. 196 degrees SW  
c. S 16 degrees W  
d. 16 degrees SW
42. 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  $\frac{2}{3}$  the total height of the tree  
d. the very top of the tree
43. Light distribution can affect tree form, resulting in \_\_\_\_\_.  
a. greater development of the tree on the side exposed to the most sunlight  
b. less growth on the side of the tree exposed to the most sunlight  
c. a tall, spindly tree because of exposure to the sun  
d. a short, overtopped tree because of exposure to the sun
44. Seed formation depends on the amount of reserve \_\_\_\_\_ and nitrogenous materials in a tree.  
a. Fatty acids  
b. Carbohydrates  
c. Proteins and amino acids  
d. Oxygen
45. The term \_\_\_\_\_ is used to describe the physical expression of an inherited tree trait that can be measured and observed.  
a. Genotype  
b. genetic map  
c. physical map  
d. phenotype
46. The damage done by the gypsy moth is when it is in the \_\_\_\_\_ stage.  
a. Adult  
b. Pupae  
c. Egg  
d. Larva
47. Adult insects have 6 legs, adult mites have \_\_\_\_ legs.  
a. 2  
b. 4  
c. 6  
d. 8
48. Abnormal growth on trees that is caused by insects or mites is often called \_\_\_\_\_.  
a. Galls  
b. Conks  
c. Whirls  
d. Scales

49. How many acres are in an area 25 chains long by 20 chains wide?

- a. .5 acres
- b. 5 acres
- c. 50 acres
- d. 500 acres

50. Trees are planted along city streets to help increase \_\_\_\_\_.

- a. gas removal and particulate collection
- b. summer air temperatures
- c. temperatures of sidewalks and road surfaces
- d. wind velocity

## 2022 National FFA Forestry CDE Knowledge Exam B Answer Key

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