

2011 National FFA Agronomy
Career Development Event Written Test
50 Multiple Choice Questions
Choose the Best Answer

1. Which of the following plants can symbiotically fix nitrogen?
 - a. wheat
 - b. corn
 - c. lentils
 - d. cotton

2. A fertilizer that is a high pressure liquid and 82.2% nitrogen is:
 - a. urea
 - b. 82% nitrogen solution
 - c. aqua ammonia
 - d. anhydrous ammonia

3. Phosphorus will not move a great deal in the soil because:
 - a. it is a cation and reacts with organic matter
 - b. it is a cation and reacts with sand
 - c. it is an anion and reacts with calcium, iron, aluminum and clay surfaces
 - d. it is applied at a low rate

4. Potassium fertilizer would be needed most on:
 - a. sandy soil
 - b. clay loam soil
 - c. sandy loam soil
 - d. potassium rates are not affected by soil type

5. Soil structure is defined as:
 - a. the way sand, silt and clay are grouped together
 - b. the way the soil was built by glaciers
 - c. the ability of soil to be used in supporting buildings
 - d. the percent of sand, silt and clay

6. The soil with the best water holding capacity would be:
 - a. sand
 - b. silt loam
 - c. clay loam
 - d. sand loam

7. Wind erosion that moves small sized particles over great distances is what type of erosion?
 - a. surface creep
 - b. sheet
 - c. splash
 - d. rill

8. Most soil compaction results from:
 - a. excessive freezing and thawing
 - b. driving on or tilling wet ground
 - c. improper use of fertilizers and chemicals
 - d. driving on or tilling dry ground

9. An insecticide that moves throughout the plant is:
 - a. systemic
 - b. contact
 - c. photosynthetic
 - d. juvenile

10. Which of the following signal words represent the greatest hazard?
 - a. hazard
 - b. warning
 - c. danger
 - d. toxic

11. One limitation of a no-till system is:
 - a. increases fuel costs
 - b. increases machinery costs
 - c. requires more labor
 - d. certain pests may be more of a problem

12. A hybrid is:

- a. the most expensive seed source
- b. a cultivated variety within a plant species that is different from other members of its species
- c. a male plant
- d. offspring of two parents that are different in one or more heritable characteristics

13. A cultivar is:

- a. the most expensive seed source
- b. a cultivated variety within a plant species that is different from other members of its species
- c. a male plant
- d. offspring of two parents that are different in one or more heritable characteristics

14. The label directs you to add a spreader-sticker to the tank mix. The application rate for the spreader-sticker (surfactant) is 3 quarts per 100 gallons of water. You need to mix 115 gallons of spray. How much spreader-sticker do you need?

- a. 34.5 oz
- b. 55 oz
- c. 110 oz
- d. 441 oz

15. You have a fungicide with a 50WP formulation. The label recommends 3 pounds of active ingredient per acre applied. How much product do you need to apply to meet this recommendation?

- a. 2 pounds
- b. 4 pounds
- c. 6 pounds
- d. 8 pounds

16. You are planting 40 acres of pinto beans. You want to plant 60 pounds of viable seed per acre. The seed you purchased is 95% pure with a germination of 95%. How many actual pounds must you plant?

- a. 1855 pounds
- b. 2805 pounds
- c. 3100 pounds
- d. 3565 pounds

17. Integrated pest management (IPM) is pest control based on the principle of:
- pest eradication through chemical and nonchemical management procedures
 - management of pest populations through a combination of various chemical pesticide groups
 - management of pest populations through chemical and nonchemical procedures
 - pest eradication through a management program which combines using various pesticide groups at established time periods
18. Plant diseases native to an area and generally at a low level are called:
- endemic
 - epidemic
 - pathogenic
 - organismal
19. Most fungicides are applied:
- as protectants
 - as eradicants
 - to control bacteria
 - after infection has occurred
20. Plant diseases occur when the following occur at the same time:
- a susceptible plant, a virulent pathogen and a favorable environment
 - a susceptible plant, a virulent pathogen and insect pests
 - a virulent pathogen, an environment favorable for disease and insect pests
 - a susceptible plant, insect pests, and freezing temperatures
21. Management of plant diseases:
- is most effectively accomplished with fungicides
 - can be successfully accomplished with an integrated approach utilizing resistant plants, cultural controls and chemicals
 - is never a problem if you use the right chemical
 - occurs naturally during rainy weather
22. It may be necessary to repeat an application of a foliar (ex. Leafblights) fungicide because:
- the fungi become resistant to the fungicide
 - new diseases become a problem
 - the disease becomes more severe with time
 - the plant continues to produce new unprotected foliage

23. Viruses are transmitted between plants:
- by insects, mechanically, or by pollen
 - always by insects
 - spores
 - by wind
24. An example of an insect that is a predator is a :
- green lacewing
 - aphid
 - honey bee
 - grasshopper
25. There are _____ sections of land in a township.
- 6
 - 16
 - 36
 - 72
26. The life cycle of a plant that grows vegetation the first year then flowers and produces seed the next year is a:
- winter annual
 - summer annual
 - perennial
 - biennial
27. Winter varieties of crops need a cool or freezing period in order to insure the plant will flower the next year. For example winter wheat. This process is called:
- vernalization
 - glutenizing
 - scarification
 - bolting
28. The tillers of a plant can best be described as:
- roots
 - leaves
 - crown
 - stems

29. The most common type of corn grown in the United States is:
- pop
 - sweet
 - dent
 - flint
30. Select the condition that could help reduce pesticide volatilization:
- high air temperatures
 - low relative humidity
 - incorporation
 - small droplets
31. Spray drift is the least when which of the following conditions exist?
- droplet size increases, wind speed increases
 - droplet size decreases, wind speed decreases
 - droplet size decreases, wind speed increases
 - droplet size increases, wind speed decreases
32. Drift problems can be reduced by:
- lowering pressure and decreasing the nozzle orifice
 - increasing pressure and increasing the nozzle orifice
 - spraying upwind of a sensitive area and leaving an untreated border
 - placing a spray boom as close to the target as possible
33. The average water needs of a plant are greatest when:
- the seed is placed in the soil
 - when the plant is in the cotyledon stage
 - when the plant is nearing or in reproductive stage
 - when the plant has reached maturity
34. What improves the chances that a corn plant survives a frost?
- location of the plant growing point
 - rooting depth
 - insecticide used
 - soil texture

35. Which of the following plants best tolerates drought?
- small grains
 - corn
 - perennial forages
 - soybeans
36. The primary advantage of fallowing land is:
- improve soil moisture
 - improve soil structure
 - improve soil micro organisms
 - prevent erosion
37. What advantage does a crop rotation system have over a single crop system?
- requires less machinery
 - helps break pest cycles
 - allows farmers maximum participation in government commodity programs
 - reduces chances of a crop failure
38. The symptoms are: chlorotic leaves, with yellowish, reddish, or purplish tints developing, leaves falling prematurely and smaller plants with a lower yield. All symptoms of:
- iron deficiency
 - aphid infestation
 - zinc deficiency
 - nitrogen deficiency
39. Which of the following nutrients becomes more available as the pH increase? (becomes more alkaline)
- manganese
 - iron
 - copper
 - calcium
40. In small grain production, jointing refers to which of the following?
- tiller production
 - the head is in the boot
 - the first node is visible
 - the flag leaf has emerged

41. Your agronomist suggests applying a 35-0-0-10 fertilizer to your land. The 10 represents 10 %:
- sulphur
 - lime
 - boron
 - zinc
42. The leaf blade of a grass plant is attached to a leaf sheath which in turn attaches to the stem of the plant at the:
- auricles
 - ligules
 - node
 - crown
43. In some cases, one can estimate the amount of organic matter found in the soil until it becomes totally black. Soil is black when the organic matter content is equal to or greater than _____ percent.
- 1
 - 2
 - 4
 - 5
44. Your soil test recommends 150 pounds of nitrogen per acre applied to your 25 acre field. How much 35-0-0 do you need to apply to meet the recommendation for this field?
- 429lbs./acre
 - 150 lbs./acre
 - 444 lbs./acre
 - 245 lbs/acre
45. Which of the following is NOT a plant pathogen.
- fungi
 - bacteria
 - weeds
 - nematodes

46. Grassy weeds can be identified based on morphological traits such as:
- size and shape of spike
 - petiole length
 - auricles and ligules
 - structure of veins in the leaves
47. In general, the optimum pH for the growth of most plants is between:
- 4.5 – 5.0
 - 5.0 – 5.5
 - 6.0 – 6.5
 - 7.0 – 7.5
48. Which of the following definitions best describes a petiole:
- the surface of the leaf
 - the stem attached to the leaf
 - the vein structure in the leaf
 - the edge of the leaf
49. Which of the following conditions is best for long-term seed storage?
- hot and dry
 - high relative humidity and high temperatures
 - varying temperatures and low relative humidity
 - low temperature, low relative humidity
50. _____ is when a plant produces a chemical toxin that impairs the growth of a different plant.
- antibiosis
 - autotoxicity
 - symbiosis
 - allelopathy