

2010 State FFA Crops Contest Written Exam

1. The Economic Optimum N rate for corn is:
 - a) The rate where the corn yield is at the maximum level
 - b) The rate where the last unit of N returns a grain yield high enough to pay for the N
 - c) The rate where the N rate is at a maximum for the crop
 - d) The rate when lodging starts

2. Producers tend to make soybean replant decisions based on:
 - a) Quick visual estimates
 - b) Scientific data
 - c) Research findings
 - d) News reports

3. If a decision is made to replant soybeans late in the season, it would be best to:
 - a) Plant in wide rows
 - b) Plant at a higher seeding rate
 - c) Plant at a lower seeding rate
 - d) Fertilize heavily with nitrogen

4. When evaluating soybeans after a hail storm, what type of damage would warrant replanting?
 - a) Removal of the terminal bud
 - b) Severing the stem below the cotyledons
 - c) 50% of the leaves removed
 - d) All of the above

5. Soybeans respond to poor stands by:
 - a) Producing tillers
 - b) Increasing branching
 - c) Producing rhizomes and stolons
 - d) Soybeans don't grow in poor stands and should be replanted

6. Which of the following performs the worst under acid soil conditions?
 - a) Alfalfa
 - b) Red clover
 - c) White clover
 - d) Lespedeza

7. Which of the following is an annual?
 - a) Red clover
 - b) Sweetclover
 - c) Orchardgrass
 - d) Sudangrass

8. When seeding forage species, what is the normal seedling death rate?
 - a) 5-10%
 - b) 20-30%
 - c) 30-40%
 - d) 40-60%

9. Unless corn is to be used for silage, it is considered to be very risky to plant corn in central Iowa after:
 - a) June 1st
 - b) June 5th
 - c) June 10th
 - d) June 25th

10. When planting corn in dry conditions you should plant:
 - a) Shallower than the normal depth
 - b) At the normal depth
 - c) Deeper than normal depth
 - d) Doesn't make a difference

11. The majority of corn planted is in what row spacing?
 - a) 20 inches
 - b) 30 inches
 - c) 36 inches
 - d) 40 inches

12. Switchgrass will use as much or more of which nutrient when compared to corn?
 - a) Nitrogen
 - b) Potassium
 - c) Phosphorus
 - d) Iron

13. Which disease limited yields of switchgrass in the 1990s?
 - a) Pythium disease
 - b) Stem rot
 - c) Stem canker
 - d) Smut

14. A common way to control weeds in switchgrass grown for conservation is to:
 - a) Use herbicides
 - b) Control burn in the spring
 - c) Control burn in the fall
 - d) Cultivate in early spring

15. Switchgrass does well on soils with a pH range of ___?
- a) 2.5-4.5
 - b) 4.5-6.5
 - c) 5.5-7.0
 - d) 6.5-8.0
16. What are examples of “allelopathic” crops that help control weeds in organic farming?
- a) Corn and soybeans
 - b) Oats and rye
 - c) Sorghum and millet
 - d) Alfalfa and soybeans
17. _____ is the “cornerstone” of organic farming.
- a) Prevention
 - b) Adaptability
 - c) Survival
 - d) Trial and error
18. The basis for insect, disease, and nematode management in organic farming is:
- a) Synthetic chemicals
 - b) Natural chemical compounds
 - c) The inherent equilibrium in nature
 - d) Resistant crops
19. Which term or terms are defined by “Law”?
- a) Natural
 - b) Organic
 - c) Eco-friendly
 - d) All of these are defined by law
20. Intercropping winter cereal grain and red clover:
- a) Protects the soil from erosion
 - b) Reduces nitrate leaching
 - c) Requires little tillage if following soybeans
 - d) All the above are true
21. Frost seeding of Red clover can be done:
- a) On frozen ground
 - b) In late February
 - c) In early March
 - d) All of the above are true
22. Excessive rates of which nutrient on cereal grains would cause “lodging”?
- a) Potassium
 - b) Nitrogen
 - c) Lime
 - d) Calcium

23. Which crop has the ability to biologically “fix” atmospheric nitrogen?
- a) Red clover
 - b) Oats
 - c) Triticale
 - d) Barley
24. Which of the following is a serious water quality concern:
- a) Nitrogen fertilizer
 - b) Phosphorus fertilizer
 - c) Sediment
 - d) All are serious water quality problems in Iowa
25. Corn yield declines significantly when topsoil thickness is less than:
- a) 11 inches
 - b) 22 inches
 - c) 33 inches
 - d) 60 inches
26. Which time of application of nitrogen is most efficient as far as plant utilization?
- a) Spring
 - b) Fall
 - c) Winter
 - d) There is no difference
27. The Bray P₁ test for phosphorus is not recommended for soils with:
- a) High organic matter
 - b) High pH
 - c) High clay content
 - d) Low sand content
28. A Late Spring Test is used for which nutrient?
- a) Iron
 - b) Nitrogen
 - c) Potassium
 - d) Phosphorus
29. The greatest decrease in SCN numbers occurs during which crop year?
- a) 1st year corn
 - b) 1st year soybean
 - c) 2nd year corn
 - d) 3rd year corn

30. SCN numbers increase in the soil as what other soil factor increases?
- a) Soil water content
 - b) Soil pH
 - c) Soil phosphorus levels
 - d) Sand content in the soil
31. Which is NOT one of the ways that SCN damages soybean plants?
- a) Stunts roots
 - b) Causes wounds
 - c) Takes food away from plant
 - d) Prevents fertilization of flowers
32. Which major nutrient is the most mobile in the soil?
- a) Nitrogen
 - b) Potassium
 - c) Phosphorus
 - d) Manganese
33. As erosion occurs, the crop productivity potential of a soil:
- a) Decreases as topsoil thins
 - b) Is not affected because we can apply fertilizer to replace lost nutrients
 - c) Is not important because we produce more corn than the market can buy
 - d) Increases as topsoil thins
34. Which cereal grain has the highest returns/acre?
- a) Oats
 - b) Winter wheat
 - c) Barley
 - d) All are about the same
35. Which regional varieties of switchgrass are most winter hardy?
- a) Southern
 - b) Northern
 - c) Mid regions
 - d) All are the same
36. The earliest planting date that farmers in central Iowa should consider for corn is:
- a) April 15th
 - b) April 25th
 - c) May 1st
 - d) May 5th

37. When selecting a forage species or several species, first consider:
- Time of year
 - Appropriateness for intended use (pasture, hay, etc.)
 - Seeding equipment
 - All of the above
38. A farmer harvests a test plot that is 120 feet long and 60 feet wide. What part of an acre was harvested?
- 0.165
 - 0.235
 - 0.625
 - 0.786
39. A farmer needs to know how many bushels of grain there are in a bin that is 30 feet in diameter and the grain is 28 feet deep. If one bushel occupies 1.25 cubic feet, about how many bushels are in the bin?
- 706.5
 - 1050
 - 15834
 - 19792
40. Which of the following is not a "Signal Word" on a chemical label?
- Caution
 - Danger
 - Poison
 - Warning
41. A farmer wants to apply nitrogen as liquid N (28%). If the desired rate of actual nitrogen per acre is 120 pounds, how many pounds of liquid nitrogen must be applied per acre?
- 33.6
 - 429
 - 1628
 - 3360
42. The longevity of a forage species is determined greatly by:
- Cold hardiness traits
 - Types of tillage
 - Seeding rate
 - Palatability
43. Which cropping rotation would receive the highest N credit for this year's corn crop?
- Corn following corn
 - Corn following soybeans
 - Corn following brome grass
 - Corn following alfalfa

44. In the Iowa Crop Performance Test for soybeans, when you are evaluating two hybrids and there is an LSD of 2, which of the following statements is true?
- a) The top yielding variety is 2 bushels/acre better than the second highest variety
 - b) The lowest yielding variety is half the top yielding variety in yield potential
 - c) The varieties are separated into 2 groups according to yield potential
 - d) Varieties that yield within 2 bushels of one another are assumed to be genetically equal
45. Which plant part is first to emerge from the seed?
- a) Epicotyl
 - b) Mesocotyl
 - c) Plumule
 - d) Radicle
46. When a corn plant is said to “black layered”, which statement best describes what has occurred in the plant?
- a) The seedling has emerged from the black soil layer
 - b) The plant has established brace roots that attach to the black soil layer
 - c) The kernels have attained maximum dry weight
 - d) The corn has a layer of “black smut” spores on the end of the ear
47. If a soybean plant is damaged by hail above the cotyledons, it will:
- a) Grow back from axillary buds
 - b) Grow back from terminal buds
 - c) Grow back from rhizomes
 - d) Die
48. Soybeans were domesticated in what country?
- a) United States
 - b) China
 - c) Brazil
 - d) Japan
49. Who may request soybean varieties to be included in the Iowa Crop Performance Seed test?
- a) Companies
 - b) Iowa Crop Improvement Association
 - c) Farmers
 - d) All of these
50. The primary consideration in selecting a soybean variety or brand is:
- a) Disease resistance
 - b) Harvestable yield
 - c) Insect resistance
 - d) Lodging score

2010 State FFA Crops Contest Written Exam

FFA Written Exam Key

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