

State Crops Exam 2016

Instructions: Read each multiple-choice statement carefully and then mark the answer on the score sheet that corresponds to the best answer. You may use a calculator and the yellow Corn and Soybean Field Guide on this part of the contest.

1. What is the proper seeding depth for Alfalfa?
 - a. ½ inch
 - b. 1 ½ inches
 - c. 1 inch
 - d. 2 inches

2. Rhizobium nodules on legumes are healthy and active when _____ in color.
 - a. Brown (tan)
 - b. Green
 - c. Pink (streak colored)
 - d. Yellow

3. Roots are different from stems as roots do not have:
 - a. Xylem
 - b. Rhizobia
 - c. Nodes
 - d. Cambium

4. Soybean growth and maturation is most affected by:
 - a. the angle of the sun
 - b. light intensity
 - c. temperature
 - d. day length

5. Corn growth and maturation is most affected by:
 - a. the angle of the sun
 - b. day length
 - c. light intensity
 - d. temperature

6. A black layer at the base of a corn kernel, taken from an ear of corn, indicates:
 - a. Disease
 - b. Black-tip of corn
 - c. Physiological maturity
 - d. Weevil damage

7. Soybean varieties are frequently identified by their
 - a. hilum color
 - b. seed size
 - c. tendency to split
 - d. seed surface texture

8. If planning to plant no-till double-crop soybeans following wheat, when should the crops be fertilized?
 - a. wheat needs to be fertilized in the fall prior to wheat establishment and soybeans directly after harvesting the wheat
 - b. soybeans need to be fertilized in the fall prior to soybean establishment while wheat will not need fertilized because they will get nitrogen from the soybeans which are legumes
 - c. wheat needs to be fertilized in the fall prior to wheat establishment and soybeans will not need fertilized because they will get nitrogen from the wheat which is a legume
 - d. both crops need to be fertilized in the fall prior to wheat establishment

9. All of the following are adapted to somewhat poorly drained soils except
- Orchardgrass
 - Timothy
 - Red Clover
 - Sweetclover
10. What is the last Hessian fly free date in southern Indiana?
- October 4
 - October 9
 - October 12
 - October 15
11. When you buy 0-0-60 for your garden, you are buying _____ plant food.
- Potassium
 - Phosphorus
 - Lime
 - Nitrogen
12. Which of the following grasses has fringe of hairs on the ligule, no hairs on the folded blade, a flat sheath, and no auricles?
- Echinochloa crus-galli*
 - Cenchrus pauciflorus*
 - Setaria glauca*
 - Panicum dichotomiflorum*
13. How many bushels of corn will fit in a grain bin that is 25 feet wide, 35 feet to the eave, and 48 feet tall at the top of the cone?
- 12090 bushels
 - 15480 bushels
 - 19307 bushels
 - 20790 bushels
14. If you had soil ranging from 7.0-8.0 which of the following minerals would likely be deficient in your soil?
- Magnesium
 - Manganese
 - Sulfur
 - Nitrogen
15. A farmer harvests her soybeans and finds the moisture to be at 14.38%. How many pounds will he need to equal a bushel at 13% moisture?
- 60.70 lbs
 - 60.84 lbs
 - 60.97 lbs
 - 61.05 lbs
16. Farmer Kraig notices his corn plants are stunted, dark green with purpling or reddening of tips and leaf margins of young plants. He suspects a nutrient deficiency. Which of the following nutrient would you suggest the plants are deficient?
- Phosphorus
 - Nitrogen
 - Potassium
 - Magnesium
17. What is the gallons per minute (GPM) output per nozzle required to broadcast a herbicide at 18 gallons per acre (GPA), using a nozzle spacing of 6 feet and a ground speed of 12 mph?
- 0.096
 - 1.313
 - 0.218
 - 2.618

18. Which of the following nozzle type is suggested mostly for weed and brush control in pastures, fence row, and roadsides?
- Flooding Flat
 - Hollow Cone
 - Broadcast
 - Flat Fan
20. Farmer Sarah is scouting her field of corn in August to September. Which of the follow might he expect to find?
- Black Cutworms
 - Flea Beetles
 - Corn Rootworm Adults
 - White Grubs
21. A field of soybean has plants with bending and twisting stems and leaf strapping (feathering). This damage is most likely caused by _____ herbicide.
- 2,4-D
 - FlexStar
 - Dual II
 - Sonalan
22. Which of the following grasses would be best planted with alsike clover in poorly drained soil?
- Barley
 - Timothy
 - Sudangrass
 - Reed Canarygrass
23. In what situation, would you find a nitrogen deficiency in soybeans?
- incorrect application of fertilizer
 - pH to low for nodulation
 - too high of soybean population
 - herbicide carryover
24. What stage of corn growth and development do you have silk development?
- R1
 - R3
 - R6
 - VT
25. If Farmer Jane planted corn on April 20 with 28,000 plant population per acre, what would be her expected percent of optimum yield for the year?
- 97
 - 98
 - 99
 - 100
26. What bacterial corn infection can be carried by adult corn flea beetles and cause leaves to have 1 inch long straw colored lesions with wavy margins?
- Macrophomina phaseolina*
 - Cercospora zea-maydis*
 - Erwinia stewartii*
 - Bipolaris maydis*
27. Farmer Jeff is conducting a few seed plot experiments for a small seed company. In order to calculate yield on a per acre basis, he needs to calculate the plot area. The plot is 145 feet by 278 feet. How large is the plot on a per acre basis?
- 40310
 - 40.31
 - 92.55
 - 0.925

28. If farmer Dan is calibrating his corn planter and is looking for 32,000 seeds per acre in 36 inch rows, what is should his spacing between kernels be in the row?
- 5.8"
 - 5.6"
 - 5.4"
 - 5.3"
29. You live north of US 24, what maturity group of soybeans should you plant?
- Group 1
 - Group 2
 - Group 3
 - Group 4
30. Identify the inflorescences of a red clover plant.
- Panicle
 - Umbel Raceme
 - Head
 - Raceme
31. A 60% leaf loss due to hail at the 10 leaf stage causes ____ average yield loss on your corn crop this year.
- 7%
 - 8%
 - 9%
 - 10%
32. Which of the following is a male part of a flower responsible for pollen production?
- Stigma
 - Filament
 - Anther
 - Style
33. For sampling purposes, what part of the plant should you sample if your soybeans are over 12" tall and how many plants should you sample?
- Top fully expanded trifoliates, 50-100 plants
 - Top fully expanded trifoliates, 20-30 plans
 - Entire plant above ground, 20-30 plants
 - Entire plant above ground, 50-100 plants
34. In mid April, Farmer David has a field of soybeans with foliage that has been skeletonized giving them a lacy appearance. What pest is causing this damage?
- Mexican Bean Beetle
 - Soybean Thrips
 - Soybean Aphid
 - Twospotted Spider Mites
35. Johnsongrass is distinguishable from sudangrass because johnsongrass has _____
- Stolons
 - Rhizomes
 - Flowers
 - Internodes
36. Farmer Janet planted alfalfa this year in one of her fields. She notices after a few mornings of freezing temperatures some of her plants are falling over and lying on the ground. Which of the following is a logical reason for this issue?
- The alfalfa plants are heaving
 - An insect infestation has occurred. The insects have been eating the base of the stems
 - The alfalfa plants are infected by alfalfa wilt
 - The wildlife are stepping on all the alfalfa plants

37. If you have a hoop with a diameter of 33 inches, what factor do you multiply the number of soybean plants within the hoop by to achieve plants per acre?

- a. 8,870
- b. 13,872
- c. 8,855
- d. 7,337

Questions 38-40:

Farmer Rob received his soil test results in the mail. The Bray P_1 results showed 21 ppm available phosphorous. Exchangeable potassium was found to be 130 ppm soluble potassium. This area of the field is capable of 60 bu/ac soybeans in a good year. The soil type is a silt loam with a CEC of 10.

38. How many pounds of phosphorous need to be applied per acre?

- a. 0
- b. 25
- c. 50
- d. 105

39. How many pounds of potassium need to be applied per acre?

- a. 0
- b. 25
- c. 40
- d. 105

40. How many pounds of nitrogen need to be applied per acre?

- a. 0
- b. 25
- c. 40
- d. 90