

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 plans to utilize his turkey's waste with litter (29% dry matter) to fertilize his crops. How much total nitrogen (pounds/ton of raw waste) can he expect from that fertilizer source?
- 20
 - 25
 - 27
 - 30
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?

- a. 5.8"
- b. 5.6"**
- c. 5.4"
- d. 5.3"

29. You live north of US 24, what maturity group of soybeans should you plant?

- a. Group 1
- b. Group 2**
- c. Group 3
- d. Group 4

30. Identify the inflorescences of a red clover plant.

- a. Panicle
- b. Umbel Raceme
- c. Head**
- d. Raceme

31. A 60% leaf loss due to hail at the 10 leaf stage causes ____ average yield loss on your corn crop this year.

- a. 7%
- b. 8%**
- c. 9%
- d. 10%

32. Which of the following is a male part of a flower responsible for pollen production?

- a. Stigma
- b. Filament
- c. Anther**
- d. 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?

- a. Top fully expanded trifoliates, 50-100 plants
- b. Top fully expanded trifoliates, 20-30 plants**
- c. Entire plant above ground, 20-30 plants
- d. 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?

- a. Mexican Bean Beetle**
- b. Soybean Thrips
- c. Soybean Aphid
- d. Twospotted Spider Mites

35. Johnsongrass is distinguishable from sudangrass because johnsongrass has _____

- a. Stolons
- b. Rhizomes**
- c. Flowers
- d. 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?

- a. The alfalfa plants are heaving**
- b. An insect infestation has occurred. The insects have been eating the base of the stems
- c. The alfalfa plants are infected by alfalfa wilt
- d. 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 P₁ 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