

State Crops Exam 2017

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.

- Farmer Owen has had a wet spring and is noticing that his soybean seedlings are dying off. Upon closer investigation he notices the lower stems are black and the roots are decayed. Which of the following is the likely cause of the plant symptoms?
 - Brown stem rot
 - Phytophthora**
 - Peronospora manshurica*
 - Cercospora kikuchii*
- Calculate the pounds of soybeans at 15.5% moisture you will need to equal one bushel of 13% moisture soybeans.
 - 61.05
 - 61.41
 - 61.77**
 - 62.14
- If you are calibrating your corn planter and desire 34,000 kernels per acre in 30 inch rows, the spacing between kernels in the row should be
 - 6.1"**
 - 6.5"
 - 5.8"
 - 5.5"
- What is the approximate CED range on clay soils?
 - 15-30
 - 20-40**
 - 30-80
 - None of the above are correct
- Farmer Grant is conducting some seed plot experiments for a small seed company. In order to calculate the yield on a per acre basis, he needs to calculate the plot area. The plot was 45 feet by 30 feet. How large is the plot?
 - 0.251 acres
 - 0.023 acres
 - 0.143 acres
 - 0.031 acres**
- Stolons are common in plants with _____ life cycle.
 - Summer Annual
 - Perennial**
 - Winter Annual
 - Biennial
- How many bushels of corn would you need to fill 25,368 cubic feet?
 - 8,973
 - 10,765
 - 20,339**
 - 45,835

8. Farmer Emily just purchased a section of land with a soil test show a pH range from 7.5 to 8.5. Which of the nutrients listed below would be least available?

- A. Nitrogen
- B. Iron**
- C. Sulfur
- D. Calcium

9. Corn plants deficient in _____ will have a purplish color and stunted growth.

- A. Potassium
- B. Manganese
- C. Magnesium
- D. Phosphorus**

10. Farmer Cole needs to apply his pre-emergence chemical. He is having issues with wind the last few days and he fears the plants will break through the soil soon. What type of spray nozzle should he use to limit drift due to wind?

- A. Flooding flat**
- B. Even Flat Fan
- C. Hollow Cone
- D. Broadcast

11-14. Match the following plant structures with the functions they perform.

- | | |
|-----------------|--|
| 11. Rhizome (A) | A. Propagation below ground |
| 12. Stalk (D) | B. Storage and propagation underground |
| 13. Tuber (B) | C. Propagation above ground |
| 14. Stolon (C) | D. Storage, strength, support |

15. _____ has a compressed hairy sheath, fringe of hairs on the ligule, leaf blade with dense hairs, and no auricles.

- A. Large Crabgrass
- B. Yellow Foxtail
- C. Witchgrass**
- D. Goosegrass

16. Which of the following corn pests would you expect to see April- June?

- A. Corn rootworm, Slugs, Japanese Beetles
- B. Seedcorn Maggot, Rodents, White Grubs**
- C. Stalk Borer, Armyworms, Needle Nematodes
- D. All of the above are correct.

17. In corn plants, 151-200ppm of manganese indicates the plant is _____ in this micronutrient.

- A. High**
- B. Medium
- C. Low
- D. Always Sufficient

18. 25 plants were counted in a 35 inch diameter "hula hoop", how many thousand soybeans plants per acre can you expect?

- A. 163**
- B. 173
- C. 150
- D. 158

19. Lisa found a weed in her field that had ovate true leaves with unevenly toothed edges that have a strong odor when they are crushed. Which of the following is the weed she has located?
- A. Marestalk
 - B. Jimsonweed**
 - C. Velvetleaf
 - D. Tall Waterhemp
20. Corn plants that exhibit the following injury was most likely cause by _____.
- Injury Description: Plant yellowing then dying back from the bottom to the top. Leaves yellow in between the veins then dying from the tip to the base.
- A. Seedling Root and Shoot Growth Inhibitor
 - B. Photosynthesis Inhibitor**
 - C. Growth Regulators
 - D. Cell Membrane Disruptors
21. Which of the following is a fungus that invades growing points of corn plants causing partial or total replacement of the flower structure with a mass of unorganized leaves?
- A. Puccinia sorghi
 - B. Exserohilum turcicum
 - C. Sclerophthora macrospora**
 - D. Puccinia polysora
22. A kernel of rye, during its development, is enclosed by a
- A. lemma and palea**
 - B. lemma and glume
 - C. lemma and awn
 - D. lemma and rachis
23. Farmer Claire was scouting her soybean field in August and discovered leaves had turned red-brown. What pest might be the reason for this damage?
- A. Japanese Beetle
 - B. Bean Leaf Beetle
 - C. Twospotted Spider Mite**
 - D. Green Stink Bug
24. The Bray P_1 test is most helpful before purchasing _____ fertilizer for your soybean crop.
- A. Nitrogen
 - B. Phosphorus**
 - C. Potassium
 - D. None of the above
25. Which of the following grains do not have standards established by the USDA?
- A. Oats
 - B. Corn
 - C. Wheat
 - D. Alfalfa**
26. Alfalfa growers are most likely to have part of their first cutting damaged by_____.
- A. Plant Aphid
 - B. Grasshopper
 - C. Lady Beetles
 - D. Potato Leafhopper**

27. The disease “ _____ ” develops in place of the seed on certain grasses and forms banana-like bodies resembling rodent pellets.
- A. Ergot
 - B. Smut
 - C. Scab
 - D. Bunt
28. What is the percent moisture in corn when it reaches physiological maturity?
- A. 65
 - B. 55
 - C. 45
 - D. 35
29. In Indiana, Group 2 soybeans are planted _____ of the region where Group 3 soybeans are planted. This is due to the fact that day length is _____ where Group 2 soybeans are grown in comparison to Group 3 during the growing season.
- A. north, shorter
 - B. north, longer
 - C. south, shorter
 - D. south, longer
30. Shrinkage in grain is calculated due to
- A. known percentages of grain eaten by insects over time in stored grain
 - B. known percentages of damage that always occur in grain
 - C. moisture loss when drying grain to a desired moisture for safe storage
 - D. all of these factors combined that determine percent shrinkage
31. The selectivity of a herbicide is a measure of the
- A. time it will remain active in the soil
 - B. herbicide’s ability not to go off target (i.e. no drift, runoff, etc.)
 - C. species of weeds it will kill or control
 - D. toxicity to humans
32. The term "3 EC" appearing on the label of the herbicide you are using indicates
- A. 3% of active ingredient per gallon of emulsifiable concentrate
 - B. 3 pounds of active ingredient per gallon of emulsifiable concentrate
 - C. 3% of active ingredient per gallon of emulsifiable concentrate
 - D. 3 pounds of active ingredient per gallon of emulsifiable concentrate
33. Which of the following plants does not produce its own nitrogen?
- A. Canola
 - B. Crownvetch
 - C. Red clover
 - D. Birdsfoot trefoil
34. If you buy 0-0-60 for your crops, you are buying _____ plant food.
- A. Nitrogen
 - B. Lime
 - C. Potassium
 - D. Phosphorus

35. Farmer Natalie has 365 acres how many Hectares does she have?
- A. 14.78
 - B. 147.83
 - C. 910.23
 - D. 91.02
36. Select the first stage of pasture renovation.
- A. Overgrazing and soil testing
 - B. Seeding the legumes
 - C. Disturbing or suppressing the sod
 - D. Fertilizing
37. Which of the following is a disadvantage of Legume-renovated pastures?
- A. Needs a large amount of nitrogen fertilization
 - B. Decreases forage protein content
 - C. Need to be renovated on a more regular basis compared to straight grass pastures
 - D. Decreases forage digestibility
38. Farmer Wyatt is planting a cover crop in late fall after harvest to slow erosion, improve soil quality, and scavenge N from soil and manure. Which of the following type of plant should he be making his plant selection from?
- A. Non-Legume Broadleaves
 - B. Grasses, particularly winter cereals
 - C. Legumes
 - D. None of the above
39. Select the factor that must be considered when selecting a cover crop.
- A. Reduction of the chance of cross-hosting diseases
 - B. Climate
 - C. Soil fertility needs
 - D. All of the above
40. Which of the following cover crops would be able to tolerate poorly drained soils?
- A. Sudangrass
 - B. Alfalfa
 - C. Hairy Vetch
 - D. Sweetclover