

# 2005 CROP PRODUCTION EXAM

State Crops Contest



**Instructions:** READ EACH MULTIPLE-CHOICE STATEMENT CAREFULLY AND THEN MARK THE ANSWER ON THE SCORE SHEET THAT CORRESPONDS TO THE BEST ANSWER.  
GOOD LUCK!

1. You have planted seed corn and upon scouting the field you find flea beetles. What disease is of concern to you?
  - A. northern corn leaf blight
  - B. gray leaf spot
  - C. Stewart's wilt
  - D. seedling blight
  
2. A field is in a four year rotation of corn 1 year/soybean 3. An oblong pattern of yellowed, dying beans is present in one location in the field. What is the likely cause?
  - A. lightning
  - B. herbicide
  - C. bad seed
  - D. soybean cyst nematode
  
3. Surpass is a pre-emergence herbicide that can be used on no-till corn. Its mode of action is
  - A. growth regulator
  - B. cell growth inhibitor
  - C. amino acid inhibitor
  - D. photosynthetic inhibitor
  - E. none of the above
  
4. In corn development what unit is a way of measuring how much heat has accumulated over a 24 hour period for corn development?
  - A. GPA
  - B. photoperiod
  - C. cytokinin
  - D. GDD
  
5. Soil's negative charge comes from:
  - A. clay, silt
  - B. clay, sand
  - C. clay, organic matter
  - D. pH
  
6. Which of the following grains do **not** have standards established by the USDA?
  - A. Canola
  - B. Wheat
  - C. Corn
  - D. Alfalfa
  - E. Oats
  
7. Canada thistle is a serious pest to crop production because of its
  - A. rhizomes
  - B. stolons
  - C. lateral roots
  - D. more than one answer

8. Of the following corn relative maturity groups planted in April in central Indiana, \_\_\_\_\_ season hybrids would most likely maximize yield potential and would have the greatest growing degree day requirement.
- A. early
  - B. medium
  - C. full
  - D. early, medium or full
9. Crop residue left on the soil surface at levels of 30% or greater can
- A. increase the amount of organic matter over time
  - B. decrease soil erosion by one-half or more
  - C. decrease water run-off from the field
  - D. improve water quality in the streams and rivers
  - E. all of the above
10. From harvest to planting (i.e. over wintering), how much of the original corn residue cover can be expected to remain?
- A. 5-15%
  - B. 15-25%
  - C. 50%
  - D. 75-85%
  - E. 95-100%
11. Roots are different from stems as roots do **not** have (never have)
- A. nodes and internodes
  - B. xylem
  - C. phloem
  - D. rhizobia
12. The Bray  $P_1$  test is most helpful before purchasing \_\_\_\_\_ fertilizer for your soybean crop.
- A. nitrogen
  - B. potassium
  - C. phosphorus
  - D. boron
  - E. none of these
13. I. R. Handy constructs a spray boom that will spray 32 feet. He decides on a tractor speed and spray pressure and then travels 272 feet. When filling his spray tank to the original level, he notices that it took 6.5 gallons of water. This means that on an acre basis, he would use \_\_\_\_\_ gallons.
- A. 32.5
  - B. 30
  - C. 22.5
  - D. 37.5
14. Of the following plants, \_\_\_\_\_ is(are) a legume(s).
- A. Soybeans
  - B. Red clover
  - C. Corn
  - D. Both A & B

15. When talking about pathogens as beneficial organisms for protecting crops against damage from an insect larva, the main route(s) a pathogen enters into an insect's body is/are:
- A. orally as the insect eats contaminated plant parts
  - B. directly by contact through the insect's skin
  - C. there are no known pathogens of insects
  - D. A and B are correct
16. On June 30<sup>th</sup>, the longest daylength will occur in:
- A. Nashville, TN
  - B. Union City, OH
  - C. Kansas City, KS
  - D. Bloomington, WI
  - E. West Lafayette, IN
17. A good source of magnesium (Mg) fertilizer called \_\_\_\_\_ could be used to improve deficient soil Mg tests.
- A. urea
  - B. permanganate
  - C. dolomitic limestone
  - D. sulfur
  - E. milk of magnesia
18. Farmer Mason has experienced a rather wet spring and is noticing that some of his soybean seedlings are yellowing, wilting, and some of them are dying. Upon a closer look, a dark discoloration extending up from the root is present. What is a possible disease causing this?
- A. phytophthora
  - B. sudden death syndrome
  - C. crazy top
  - D. brown stem rot
19. Of the following, \_\_\_\_\_ is an example of a herbicide product name.
- A. Glyphosate
  - B. Monsanto
  - C. Roundup
  - D. pigment inhibitor
20. Which common pasture grass is commonly infected with an endophyte?
- A. Orchardgrass
  - B. Tall fescue
  - C. Kentucky bluegrass
  - D. Timothy
21. A nozzle sprays at an angle of  $70^\circ$ . What height (in inches) above the weed target area should the boom be placed?
- A. 20-22 in.
  - B. 15-17 in.
  - C. 21-23 in.
  - D. 10-12 in.
  - E. 17-19 in.

22. A black layer at the base of a corn kernel taken from an ear of corn in the field indicates
- A. disease
  - B. drought
  - C. weevil damage
  - D. black-tip of corn
  - E. physiological maturity
23. When WSM, a radio station in Nashville, Tennessee gives corn price quotations, the grain is of \_\_\_\_\_ grade.
- A. U.S. No. 1
  - B. U.S. No. 2
  - C. U.S. No. 3
  - D. U.S. Sample Grade
24. The disease “\_\_\_\_\_” develops in place of the seed on certain grasses and forms black banana-like bodies resembling rodent pellets.
- A. bunt
  - B. smut
  - C. ergot
  - D. scab
25. A new no-till agricultural fertilizer has an analysis of 20-18-0. The 20 indicates that there is
- A. 18 lbs of nitrogen per bag
  - B. 20% ammonium
  - C. 20% total nitrogen in the fertilizer
  - D. 20 lbs of phosphate per bag
26. If you are calibrating your corn planter and desire 26,000 kernels per acre in 30 inch rows, the spacing between kernels in the row should be
- A. 7"
  - B. 8"
  - C. 7.5"
  - D. 8.5"
  - E. 9"
27. Extrazine II, made by Dupont, is an herbicide that can be used for control of annual grasses in no-till \_\_\_\_\_ fields.
- A. Corn
  - B. Soybean
  - C. Corn & Soybean
  - D. Soybean & Wheat
28. Nitrogen fixing bacteria on legume plants are called \_\_\_\_\_.
- A. Rhizomes
  - B. N-Serve
  - C. Rhizoctonia
  - D. Rhizobia

29. A \_\_\_\_\_ seedbed is recommended to obtain optimum conditions for wheat or a small seeded forage crop establishment.
- A. coarse, rough
  - B. fine, firm
  - C. wet
  - D. broadcast seeding on a no-till
30. Where might you go to find information about trouble shooting problems in the field?
- A. your local county extension office
  - B. your local soil and water conservation district office
  - C. your local dealer of agricultural products
  - D. neighboring farms
  - E. all of the above
31. How many gallons of fuel oil will a tank 5 feet in diameter and 8 feet long hold?
- A. 825
  - B. 975
  - C. 1025
  - D. 117
  - E. 1200
32. Recently, several farmers who have had field fires after harvest and before planting have filed successful insurance claims for the loss of crop residue. Although there was no crop on the field creating immediate crop loss, studies have shown that burned fields do have substantial losses of yield in subsequent years. After a fire, herbicide problems and loss of organic matter may explain yield losses. Also a field fire will
- A. be beneficial in reducing weeds since seed amounts in a field would be reduced from burning
  - B. reduce soil erosion since ashes on top of the soil will not readily erode and protect the soil
  - C. not reduce weeds since many weed seeds are viable for 40+ years and would be protected by soil
  - D. not significantly reduce soil nutrients since the ashes remain behind on the ground and enter back into the soil
33. The SCS (Soil Conservation Service of the USDA) uses the \_\_\_\_\_ method to measure crop residue in agricultural fields.
- A. photo comparison
  - B. linear-transect
  - C. calculation
  - D. truck window
34. If you aim to side-dress your corn with anhydrous ammonia (82-0-0) and plan to place 1.1 lb. of actual nitrogen for each bushel of yield goal, how much 82-0-0 do you need per acre in a field with a 175 bu/acre yield goal?
- A. 235
  - B. 175
  - C. 158
  - D. 213
  - E. 144

35. Which of the following forages are best adapted to poorly drained soils?
- A. alfalfa
  - B. red clover
  - C. alsike clover
  - D. orchardgrass
36. In some cases, one can estimate the amount of organic matter found in the soil until it becomes totally black. Cultivated soil is black when the organic matter content is greater than percent.
- A. 2
  - B. 3
  - C. 4
  - D. 6
  - E. none of these
37. Which of the following is a signal word on a herbicide label?
- A. toxic
  - B. corrosive
  - C. harmful
  - D. danger
  - E. all of the above
38. The purpose of a cover crop is to:
- A. add an extra crop to the rotation for extra income
  - B. provide crop residue for erosion and weed control
  - C. produce straw and wildlife cover
  - D. all the above are correct
39. You are conducting some seed plot experiments for a small seed company. In order to calculate yield on a per acre basis, you need to calculate the plot area. The plot was 150 feet by 120 feet. How large is the plot on a per acre basis?
- A.  $5.7 \times 10^{-3}$  acres
  - B. 0.41 acres
  - C.  $9.1 \times 10^{-2}$  acres
  - D. 1.8 acres
40. Of the following, \_\_\_\_\_ is not one of the parts of the floret in a grass flower.
- A. petal
  - B. lemma
  - C. pistil
  - D. stamens
  - E. palea