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 P₁ 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 30th, 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°. 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. 5.7X10^{-3} acres
   B. 0.41 acres
   C. 9.1X10^{-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