2005 CROP PRODUCTION EXAM
Purdue Invitational Crops Contest

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 & SOYBEAN FIELD GUIDE ON THIS PART OF THE CONTEST. GOOD LUCK!
Label the following parts of this grass plant with the correct names for questions 1, 2, and 3.

A. collar    B. ligule    C. auricle    D. sheath

1. _____ B

2. _____ C_____

3. _____ D

4. A ________ seedbed is recommended to obtain optimum conditions for wheat or a small seeded forage crop establishment.
   *A. fine, firm
   B. coarse, rough
   C. broadcast seeding on a no-till
   D. wet

5. What is the single most important factor in determining when you should plant soft red winter wheat?
   *A. Hessian fly departure (emergence)
   B. expected spring thaw
   C. after you have applied adequate nitrogen
   D. the average date of the first frost or freeze

6. When using urea as a nitrogen source, what percent is nitrogen?
   A. 82    *B. 46    C. 34    D. 28

7. From harvest to planting (i.e. over wintering), how much of the original residue cover can be expected to remain?
   A. 5-15%    B. 15-25%    C. 50%    *D. 75-85%    E. 95-100%

8. Which of the following corn relative maturity groups are most likely to yield the least and have a minimal growing degree day requirement?
   *A. early    B. medium    C. full    D. it does not matter

9. There are ______ acres in one square mile.
   *A. 640    B. 160    C. 80    D. 40    E. 20

10. Grasses are ________ and have ________ root systems.
    A. monocots, tap    B. dicots, fibrous    *C. monocots, fibrous    D. dicots, tap
11. 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

12. When a person is scouting corn fields, the best time to look for the presence of fall armyworm is?
   A. April to May
   B. early May to early June
   C. June
   *D. mid July to early October

13. Of the following, ________ is an example of a herbicide product name.
   A. Glyphosate     B. Monsanto     *C. Roundup     D. pigment inhibitor

14. Roots are different from stems as roots do not have (never have)
   *A. nodes and internodes     B. xylem     C. phloem     D. rhizobia

15. A bushel is a measure of
   A. area     B. weight     *C. volume     D. density

16. If you were scouting a field over the summer for a hybrid company, and they wanted to know the life cycle of the Honeyvine milkweed infesting their soybean test plots, you would tell them that Honeyvine milkweed is a:
   A. biennial *B. perennial     C. winter annual     D. summer annual

17. 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 50 feet by 30 feet. How large is the plot on a per acre basis?
   A. 0.25 acres     B. 0.0232 acres     *C. 0.034 acres     D. 0.01 acres

18. Dry soils are ______ to warm in the spring than wet soils.
   *A. quicker     B. slower     C. no different

19. Wet spots on end rows, numerous horizontal roots, and irregular plant heights correspond to __________ problems.
   A. soil fertility *B. soil compaction     C. herbicide injury     D. varmint

20. Most of the corn in Indiana is planted in rows separated by ______ inches.
   A. 6     B. 24     *C. 30     D. 36     E. 40

21. When you buy 0-0-60 for your garden, you are buying ______ plant food.
   A. nitrogen     *B. potassium     C. lime     D. phosphorus     E. salt
22. The process that winter wheat has to go through before it will produce seed?
   A. hibernation    B. winterization    *C. vernalization    D. scarification

23. Upon scouting a corn field in the V6 growth stage, you notice shortened internodes on some plants and interveinal striping on their leaves. You also note that the soil is cool and wet, low in organic matter, and compacted where the problem is occurring. What is the possible nutrient deficiency of the corn plants?
   A. Potassium    B. Phosphorous    C. Nitrogen    *D. Zinc    E. Boron

24. In the summer, day length is ____________ in Northern Indiana than in Southern Indiana.
   *A. longer    B. shorter    C. the same length

25. Nitrogen fixing bacteria on legume plants are called _________.
   A. Rhizomes    B. N-Serve    C. Rhizoctonia    *D. Rhizobia

26. Using a 50 foot knotted rope (with knots at 6 inch intervals) you find residue touching 30 knots. What is the percent residue cover?
   A. 15%    *B. 30%    C. 25%    D. 60%    E. 100%

27. The average first occurrence a person would expect a "normal" (32°F) fall freeze to typically occur in Warrick County, Indiana (assuming 50% probability) is:
   A. 6-Sept    B. 25-Nov    *C. 25-Oct    D. 1-Feb    E. None of the above

28. 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

29. The term "CEC" refers to
   *A. Cation Exchange Capacity
   B. Corn Exchangeable Capacity
   C. Corn Economic Council

30. Soil's negative charge comes from:
   A. clay, silt    B. clay, sand    *C. clay, organic matter    D. pH

31. Corn begins silking as a result of
   A. photoperiod
   *B. temperature degree days
   C. moisture
   D. intensity of darkness
32. Soil temperatures tend to be ______ and soil moisture percentages tend to be ______ in conventional than in no-till fields.
   A. colder, greater  B. colder, lesser  C. warmer, greater  *D. warmer, lesser

33. The largest source of error in lab results usually occurs from
   A. chemical problems in the labs
   B. laboratory machines that do not function properly
   C. dirty lab equipment
   *D. sampling techniques
   E. none of the above

34. If you are calibrating your corn planter and desire 30,000 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"

35. When scouting fields, __________ beetles are quickly recognized by a distinct triangular mark.
   A. Japanese  *B. Bean leaf  C. Corn rootworm  D. Mexican bean  E. Flea

36. How many liquid ounces are in a gallon?

37. If you are going to spray where herbicide drift is of concern, you would use a __________ type of nozzle tip.
   *A. flooding flat  B. hollow cone  C. flat fan  D. even flat fan

38. You are currently a farm consultant. A recent homebuyer living South of I-70 and North of US 150 would like to know what soybean maturity group he needs to use?
   A. II  *B. III  C. IV  D. I

39. Soybean growth and (flower) maturation is most affected by
   *A. day length
   B. light intensity
   C. the angle of the sun
   D. temperature
   E. both B and D

40. You are determining soybean plant populations using the hula hoop method. After tossing the hula hoop in five randomly selected locations, you find the average number of plants inside the hula hoop to be 31. The diameter of the hula hoop is 30 inches. What is the approximate number of plants per acre you will have?
   A. 213,000  *B. 275,218  C. 6,223  D. 1,000  E. 128