

# 2004 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. YOU MAY USE A CALCULATOR AND THE YELLOW CORN & SOYBEAN FIELD GUIDE ON THIS PART OF THE CONTEST. GOOD LUCK!!

Questions 1 - 4. Please match the following on the soybean picture (each term is only used once):

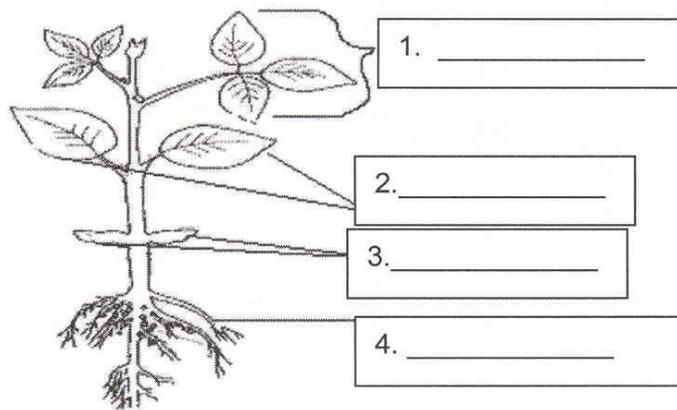
A. lateral root    B. stipules    C. trifoliolate leaf    D. cotyledons    E. unifoliolate leaf

1. C

2. E

3. D

4. A



5. Manure placed on crop fields will

**A. improve soil structure**

B. not loosen soil as much as adding sand

C. compact the soil but provide plant food

D. lower earthworm populations due to high chemical concentrations

E. both A and B

6. Of the following, you would expect soil erosion rates to be the smallest on a rotation.

A. corn-corn

B. corn-soybean-wheat

C. soybean-soybean

**D. corn-soybean-wheat-hay**

7. Of the following plants, \_\_\_\_\_ does **not** produce its own nitrogen.

A. Hairy vetch

B. Crownvetch

C. Red clover

**D. Canola**

8. Paraquat is a contact herbicide extensively used on small grain stubble in preparation for double crop soybeans. This material is not effective against perennial weeds such as

A. Giant ragweed

B. Field pennycress

**C. Johnsongrass**

D. Redroot pigweed

9. When planting seed from your bin (i.e. wheat or soybeans) you notice that the seed is small. This means you have seeds per pound and will use a seeding rate in comparison to large seed.

A. fewer, higher

B. fewer, lower

C. more, higher

**D. more, lower**

10. When you buy 28-0-0 as a fertilizer, you are buying plant food.

- A. **nitrogen**
- B. potassium
- C. lime
- D. phosphorous

**Questions 11. - 14.** Use the picture of the grass plant to answer the following:

11. The ligule is \_\_\_\_\_.

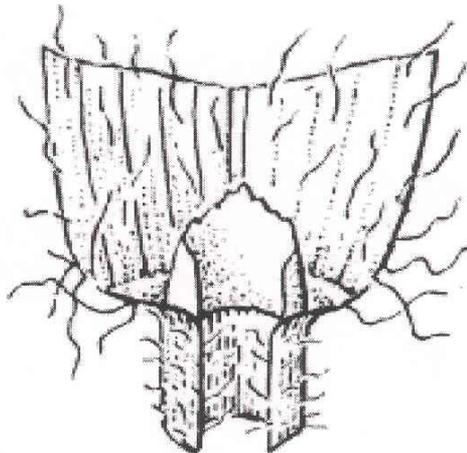
- A. round .
- B. flat
- C. covered with a fringe of hairs
- D. **membranous**

12. The blade is \_\_\_\_\_.

- A. smooth with a prominent midvein
- B. **hairy**
- C. hairless
- D. covered with short, stiff hairs

13. It has \_\_\_\_\_ auricles.

- A. clasping
- B. flat
- C. jagged
- D. **no**



14. The common name of this grass plant is:

- A. Yellow foxtail
- B. **Large crabgrass**
- C. Barnyardgrass
- D. Quackgrass

15. When grading Soft Red Winter Wheat, severely heat damaged spelt would fall under what category(ies) when determining the grade?

- A. Defects
- B. Foreign Material
- C. Heat Damage and Damage Kernels (Total)
- D. Wheat of Other Classes
- E. **A, B, and C are correct**

16. When corn initiates silking, and you want to have the nutrient levels determined, you should sample approximately \_\_\_\_\_ plants, and the samples should be taken from the \_\_\_\_\_.

- A. 20-30, entire plant above ground
- B. **15-25, top ear leaf .**
- C. 15-25, flag leaf
- D. 50-100, top 6" of the plant
- E. nutrient levels are never analyzed in corn

17. Nutrient deficiency symptoms occurring in the upper leaves of the corn plant most likely indicates a deficiency of

- A. nitrogen
- B. magnesium
- C. potassium
- D. **manganese**

18. The average occurrence of a first "hard" (28° F) fall freeze typically occurs in Tippecanoe County, Indiana (assuming 50% probability) on:
- A. **25-Oct**
  - B. 25-Nov
  - C. 6-Sept
  - D. 1-Dec
  - E. None of the above
19. On June 30, the longest daylength will occur in
- A. Nashville, TN
  - B. Union City, OH
  - C. Kansas City, KS
  - D. **Bloomington, WI**
  - E. Lubbock, TX
20. Caution should be considered when grazing sudangrass and forage sorghums due to:
- A. the endophyte fungus
  - B. auto-toxicity
  - C. **prussic acid potential**
  - D. low digestibility
21. Your field measures 7260 feet long and 1500 feet wide. The recommendation is for 180 lbs. of nitrogen per acre. You are using urea, 46-0-0. For an application of 180 lbs. of nitrogen per acre in this field, you would need to buy \_\_\_\_\_.
- A. 50 tons
  - B. **48.9 tons**
  - C. 87000 lbs.
  - D. 52.3 tons
  - E. 56980 lbs
22. Nitrogen fixing bacteria on legume plants are called \_
- A. Rhizoctonia
  - B. Rhizomes
  - C. **Rhizobia**
  - D. N-Serve
23. If you had a pigweed infestation of 1 plant per 10 ft of row your yield reduction is estimated to be:
- A. 70%
  - B. 60%
  - C. 50%
  - D. 40%
  - E. **30%**
24. If you have a recommendation of 2.4 lbs. of active ingredient per acre, you would use \_\_\_\_\_Ibs/A of a 5WP.
- A. 12
  - B. 0.5
  - C. 120
  - D. **48**
  - E. none of these are correct

25. The best time to scout for seedling blights, white grubs, and/or root rots in corn is:
- A. early July to mid September
  - B. mid June to early July
  - C. mid April to mid June**
  - D. the entire month of October
26. How many pints are there in 1½ gallons of herbicide?
- A. 8
  - B. 10
  - C. 12**
  - D. 16
27. A label reads that a herbicide should be placed at 0.25 lbs. of active ingredient per acre. If there are 32 ounces of active ingredient per gallon of herbicide, you would need one gallon of this herbicide for every \_\_\_\_\_ acres.
- A. 4
  - B. 5
  - C. 6
  - D. 7
  - E. 8**
28. When selecting a wheat variety, \_\_\_\_\_ is not taken into consideration.
- A. drought resistance
  - B. disease resistance
  - C. winter hardiness
  - D. Hessian fly resistance**
29. Roots are different from stems as roots do not have:
- A. nodes & internodes**
  - B. xylem
  - C. phloem
  - D. rhizobia
30. You have calibrated your backpack sprayer to apply 15 gallons of solution per acre. How much of the herbicide, applied at the rate of 2.5 quarts per acre would you add to the tank of your backpack sprayer if your sprayer tank holds 2 gallons of solution?
- A. 0.133qt
  - B. 0.333 qt**
  - C. 0.625 gallon
  - D. 0.5 pt
31. A perfect flower is a:
- A. flower that contains both pistil and stamens.**
  - B. male sterile flower.
  - C. female flower capable of producing seeds or spores without a male flower.
  - D. dioecious and monoecious flower.
32. What is the gallon per minute (GPM) output per nozzle required to broadcast a herbicide at 12 gallons per acre (GPA), using a nozzle spacing of 60 inches and a ground speed of 8 mph?
- A. 0.0477
  - B. 0.744
  - C. 0.969**
  - D. 0.124

33. You need to fertilize your lawn with nitrogen. Your soil is capable of holding more potassium and phosphorous since levels are adequate. Determine which 50 lb. bag of fertilizer is the best buy for the nitrogen you need.
- A. 12-12-12 @ \$9
  - B. 8-46-0 @ \$12
  - C. 0-0-60 @ \$6
  - D. 45-0-0 @ \$11**
  - E. 0-46-0 @ \$7
34. How many bushels of corn will fit in a grain bin that is 20 feet wide, 30 feet to the eave and 40 feet tall at the top of the cone?
- A. 13,190 bu.
  - B. 5024 bu.
  - C. 6073 bu.
  - D. 8396 bu.**
  - E. 10,708 bu.
35. The pistil of the flower consists of the \_\_\_\_\_.
- A. anther and filament
  - B. anther, filament, and ovary
  - C. filament, style, and embryo
  - D. stigma, style, and ovary**
36. On a herbicide label, the word atrazine would be considered the \_\_\_\_\_.
- A. trademark
  - B. trade name
  - C. common name**
  - D. chemical name
37. Durum wheat is most likely to be found in your \_\_\_\_\_.
- A. cake
  - B. spaghetti**
  - C. bread
  - D. none of the above
38. Corn plants deficient in exhibit stunted growth and a purplish color on the leaves.
- A. nitrogen
  - B. potassium
  - C. phosphorous**
  - D. manganese
39. If you are going to spray where herbicide drift could be a hazard, you would use a type of nozzle tip.
- A. flooding flat**
  - B. hollow cone
  - C. flat fan
  - D. even flat fan
40. Of the following types of crop residue, which is least beneficial in protecting the soil from soil erosion?
- A. wheat
  - B. corn
  - C. soybean**
  - D. hay