<table>
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<th>Contestant #</th>
<th>Name</th>
<th>Score</th>
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### PRINT OR WRITE LEGIBLY (4 points each)

1. a. cotyledon  
b. hypocotyl
2. velvetleaf
3. C (phosphorus)
4. A
5. a. D  
b. B
6. D (ergot)
7. F (alfalfa weevil)
8. grain moisture meter
9. yellow foxtail
10. a. C  
b. D
11. D (soybean rust)
12. C (tuber)
13. D (wheat scab)
14. wild sunflower
15. a. C  
b. A
16. E
17. yellow nutsedge
18. 4
19. a. C  
b. B
20. a. 0.3 gpm  
b. A
21. Silty Clay loam
22. rye
23. D (chinch bug)
24. a. V4  
b. V2
25. Swather
26. A (corn earworm)
27. A (charcoal rot)
28. C
29. a. R1  
b. silking
30. A
31. C (berry)
32. field bindweed
33. A
34. a. C  
b. B
35. E
36. Soybeans
37. C
38. C (square) (2 pt)
1. **TWO PARTS**  Use the soybean seedlings shown to complete these statements.

   a. The structure marked by the **WHITE** pin is called the _______________.

   b. The structure marked by the **YELLOW** pin is called the _______________.

   Word bank for this question:

   radicle, coleoptile, hypocotyl, endosperm, cotyledon, mesocotyl, first true leaf

   **List both answers in correct order.**
VEGETATIVE WEED ID

2. This weed is ____________________
3. The purple coloration on the lower leaves of these corn and corn plants is typical of a deficiency of which of the following nutrients:
   A) Nitrogen
   B) Potassium
   C) Phosphorus
   D) Iron
   E) Sulfur
4. Which is of the above fertilizers would be best to correct the purple leaf nutrient deficiency on the plants in question number 3?

ANSWER: A, B, C, or D
5. **TWO PARTS**  
ANSWER: A, B, C, or D for both.

a. Which corn seedling emerged from the greatest depth?

b. Which corn seedling will be most susceptible to “rootless corn syndrome”?

**List both answers in correct order.**
6. This seed disease is:

A) blacktip          D) ergot
B) blue eye mold      E) loose smut
C) corn smut          F) Northern corn leaf blight
7. This insect is:

A) stinkbug  
B) lady beetle  
C) blister beetle  
D) aphid  
E) painted lady  
F) alfalfa weevil
8. This piece of equipment is a (an) ________________________________
9. This weed is ______________
10. **TWO PARTS**  ANSWER: A, B, C, or D for each.

a. Which feed ingredient is made from wheat?

b. Which feed ingredient would have the highest percent protein?

**List both answers in correct order.**
11. This soybean disease is:

A) pod and stem rot of soybean       D) soybean rust
B) bacterial blight of soybean       E) Phytophthora root rot
C) bean pod mottle virus             F) purple seed stain of soybean
12. The type of specialized stem shown here that was used for asexual propagation of this potato plant is called a:

A) Rhizome  
B) Bulb  
C) Tuber  
D) Stolon  
E) Crown
13. This disease is:

A) loose smut of wheat          D) wheat scab
B) barley yellow dwarf virus    E) stem rust of wheat
C) wheat streak mosaic virus    F) leaf rust of wheat
VEGETATIVE WEED ID

14. This weed is ________________________
15. Use the legume forage plants shown here to answer the following two part question.

ANSWER: A, B, C, or D

a. Which of the plants has **pinnately compound leaves**?
b. Which of the plants is **pubescent**?

**List both answers in correct order.**
16. The seed shown in the pan came from the seed bag on display. Which of the following is true of the seeds colored purple compared to the seeds colored green?

A. They are not genetically identical to the green ones
B. They are the refuge hybrid mixed in slow development of insect resistance
C. They will be mixed in at 5% of the total seed in the bag
D. The notation “RIB COMPLETE” on the bag indicates their presence
E. All of the above are true
VEGETATIVE WEED ID

17. This weed is _______________
18. Use the hybrid sorghum seed bag provided. How many **different** chemicals are in the seed treatment?
19. **TWO PARTS**  ANSWER: A, B, C, or D for each.

a. Which wheat sample displayed would be best to make the spaghetti?

b. Which wheat sample displayed would be best to make the cookies?

List both answers in correct order.
20. Use the nozzle tips on display to answer the following two statements.

a. At standard 40 PSI pressure, the nozzle delivery rate of all three would be _____________________ gallons per minute (GPM)

b. Nozzle __________________ (answer A, B or C) would produce the smallest droplet size and be most likely to cause spray drift.

List both answers in correct order.
21. The correct soil textural class for a soil with 30 % clay, 60 % silt, and 10 % sand is a ________________________________.
22. Shown are four cereal crops that can be used for winter cover crops. The one that is the least susceptible to winter kill and is generally the most popular as a cover crop, but also is the most likely to become a “weed problem” if it is not completely terminated in the spring and is allowed to produce some seed is _________________. (Answer with the name of the crop).
23. This insect is:

A) blister beetle       D) chinch bug
B) bean leaf beetle     E) stinkbug
C) corn rootworm adult  F) lady bug
24. TWO PARTS. Give the correct vegetative growth stage for the plants shown.

a. The growth stage is of the corn plant is ____________ (letter and number).

b. The growth stage is of the soybean plant is ____________ (letter and number).

List both answers in correct order.
25. This piece of equipment is a (an)________________________.
26. This insect is

A) corn earworm          D) fall armyworm
B) green cloverworm      E) European corn borer
C) corn rootworm         F) black cutworm
CROP DISEASE

27. This disease is:

A) charcoal rot  
B) pod and stem rot  
C) Gibberella stalk rot  
D) stem rust  
E) corn smut  
F) blue eye mold
28. On the roots of this soybean plant just below the soil surface is a structure marked by the yellow pin. This structure is:

A) a cyst where soybean cyst nematodes live and feed decreasing plant yield
B) a gall produced by the bacteria causing the disease bacterial blight of soybean
C) a nodule where symbiotic nitrogen fixing bacteria live providing the plant with N
D) a reproductive structure where spores of the fungal disease Phytophthora root rot will be produced and released into the soil to infect the next crop
E) none of the above
CROP GROWTH AND DEVELOPMENT

29. Observe the corn plant on display to complete the following two statements:
   
a. The numerical growth stage is ________________ (letter and number).

   b. The descriptive term for this growth stage is ___________________.

   List both answers in correct order.
30. Which of these seedlings would have be LEAST LIKELY to recover and regrow after hail damage that occurs during the seedling growth stage shown here?

ANSWER: A, B, or C
PLANT STRUCTURE – FRUITS

31. The structure marked by the white pins are fruits of this weed which is a member of the Nightshade family. Members of this plant family typically produce seeds in this type of fruit. This fruit type is botanically called a:

A. capsule
B. pod
C. berry
D. siliqua
E. caryopsis
VEGETATIVE WEED ID

32. This weed is _______________
33. Which of the following crop “seeds” is botanically an entire fruit called an **achene**?

**ANSWER:** A, B, C, D, or E
34. Two different herbicides were applied 14 days ago POST emergence to these flats containing both crops and weeds. Answer this TWO PART question about the activity of the two herbicides:

a. The activity of the herbicide used on flat a was:
   - A) non-selective and systemic
   - B) selective and systemic
   - C) non-selective and non-systemic (contact)
   - D) selective and non-systemic (contact)

b. The activity of the herbicide used on flat b was:
   - A) non-selective and systemic
   - B) selective and systemic
   - C) non-selective and non-systemic (contact)
   - D) selective and non-systemic (contact)
A herbicide was applied PRE-EMERGENCE to this flat 14 days ago. It labelled for pre-emergence application in corn. However, as demonstrated here, some crop injury may occur. Which of the following conditions might cause this type of response?

A) too wet  
B) high soil pH  
C) sensitive corn hybrid  
D) weather to cool  
E) all of the above are possible reasons that could be factors for such a response
What crops is Resist herbicide labelled for use on?
SOIL PROPERTIES

37. Which of the soils on display has the highest sand content? (you may do texture by feel – water and towels provided)

   Answer: Soil A, Soil B, or Soil C
38. The structure marked by the white pins are flower buds on cotton plants. What is the more common name of this structures used by farmers and agronomists in describing cotton development. (2 points)

A. bolls
B. fibers
C. squares
D. spikelets
E. stipules