

## 2014 State FFA Agronomy CDE Written Test

Select the best answer and then record it on the appropriate bubble sheet.

1. At what stage does the growing point first come above ground in corn?
  - a. V1
  - b. V3
  - c. V6
  - d. V12
  
2. When staging corn a leaf (or node) is counted when the \_\_\_\_\_ is visible.
  - a. collar
  - b. leaf
  - c. sheath
  - d. blade
  
3. If the temperature on June 10<sup>th</sup> varies from a low of 46 degrees and reaches a high of 72 degrees how many GDDs (growing degree days) have been accumulated?
  - a. 9
  - b. 11
  - c. 15
  - d. 18
  
4. The first root coming from the seed is called the \_\_\_\_\_.
  - a. crown root
  - b. radical
  - c. seminal root
  - d. coleoptiles
  
5. The structure that elongates to cause emergence in corn is the \_\_\_\_\_.
  - a. coleoptiles
  - b. mesocotyl
  - c. radicle
  - d. plumule
  
6. According to the Corn Planting Guide publication an ideal final stand of corn plants per acre would be:
  - a. 26,000 plants per acre.
  - b. 30,000 plants per acre.
  - c. 34,000 plants per acre.
  - d. 38,000 plants per acre.
  
7. One major reason to stage corn plants is to know when to apply:
  - a. herbicides
  - b. insecticides
  - c. dry fertilizer
  - d. all of these
  
8. If a producer's corn was damaged by hail (was cut off at ground level) at V8, the producer should:
  - a. do nothing, it will grow back
  - b. consider replanting if early enough in the season because there will be no regrowth.
  - c. chop the corn for silage
  - d. plant a longer season variety

9. Which fertilizer nutrient is normally applied in the highest amount of actual nutrient?
- nitrogen
  - potassium
  - phosphorus
  - sulfur
10. If producers have a low pH in their soil they should apply:
- gypsum
  - lime
  - sulfur
  - iron
11. According to the ISU publication Regional Nitrogen Guidelines for Corn, the corn yield goal should be multiplied by \_\_\_\_\_ to determine the amount of nitrogen to be applied.
- 0.8
  - 1.2
  - 1.4
  - 2.0
12. Which of the following is/are common forms of nitrogen fertilizer?
- anhydrous ammonia
  - liquid
  - urea
  - all of these
13. Nitrogen can "leach" from the soil. This means that it can:
- evaporate into the air
  - move down through the soil and into the ground water
  - run off the soil surface
  - all of these
14. At harvest maturity, most nitrogen would be found in the:
- grain
  - leaves
  - stalk
  - roots
15. Generally when planting soybeans in Iowa a maturity group \_\_\_\_ should be planted.
- 0
  - 2
  - 4
  - 6
16. Soybeans have this type of root system.
- fibrous
  - seminal
  - tap
  - nodal or crown
17. If a soybean plant has cotyledons, unifoliate leaves, and two trifoliate leaves present, it would be at what growth stage?
- VC
  - V1
  - V2
  - V4

18. The growing point of soybeans first comes above ground at:
- emergence
  - VC
  - V3
  - V6
19. If the terminal bud on a soybean plant were destroyed by hail or eaten off by deer, the plant would:
- die
  - grow from axillary buds
  - grow from the hypocotyl
  - grow from the coleoptiles
20. Planting soybeans is generally not recommended until the soil temperature at planting depth reaches:
- 50 degrees F
  - 55 degrees F
  - 60 degrees F
  - 65 degrees F
21. Most soybeans planted today are tolerant of:
- 2, 4-D
  - Glyphosate
  - Glufosinate
  - Gibberellin
22. When the bacteria *Bradyrhizobium japonicum* infect the roots of soybean plants, what happens?
- the plants die
  - the roots start to rot
  - nodules are formed
  - the leaves will start to wilt
23. When growing soybeans nitrogen fertilizer:
- is not recommended
  - should be applied in a dry form (as urea)
  - should be applied before planting
  - should be applied during flowering, since that is when the pods are filling
24. If heavy rains occur after planting and the soil becomes crusted, you could use a:
- chisel plow
  - field cultivator
  - disk harrow
  - rotary hoe
25. In a period of severe moisture stress, soybean plants respond by:
- aborting flowers
  - producing fewer, but larger soybeans
  - producing more pods
  - growing from axillary buds

26. Conducting the Iowa Crop Performance Test for Corn is conducted in \_\_\_\_\_ Districts.
- 4
  - 6
  - 8
  - 12
27. In the Iowa Crop Performance Test for Corn, nearly \_\_\_\_\_ hybrids are tested.
- 100
  - 300
  - 500
  - 800
28. In the Iowa Crop Performance Test for Corn, hybrids are first ranked in order by:
- yield
  - moisture at harvest
  - lodging score
  - dropped ear percentage
29. Hybrids that were tested were grouped according to:
- relative maturity
  - pest resistance
  - fertilizer needs
  - root scores
30. If a yield test had an LSD value of 8.6, this means that:
- total yield differences for the test were 8.6 bushels from highest to lowest yield.
  - the yield trial was conducted on 8.6 plots.
  - 8.6 bushels was the average difference in yield for the plot.
  - two varieties yielding within 8.6 bushels of each other, have to be considered equal.
31. In the Iowa Crop Performance Test for Corn, \$AGV means:
- the value of the grain harvested
  - the value of the gain in yield
  - the profit per acre
  - the total expenses per acre
32. The varieties in the Iowa Crop Performance Test for Corn are identified by:
- the company producing the hybrid
  - the variety number
  - GMO traits
  - all of the above
33. If a hybrid had a % of yield mean score of 102, this means:
- the hybrid yielded 102 bushels
  - the hybrid yielded 2% more than the average yield for the varieties in the test
  - the hybrid was in the top 2% of the varieties tested
  - the yield for the variety was within the LSD 2% of the time
34. Yields in the Iowa Crop Performance Test for Corn were all adjusted to what moisture?
- 15%
  - 15.5%
  - 20%, since that is when most producers start to harvest
  - 14%, since that is the moisture for long term storage

35. In the Iowa Performance Test for Soybeans, the planting population was:
- 80,000 seeds per acre
  - 120,000 seeds per acre
  - 140,000 seeds per acre
  - 180,000 seeds per acre
36. In the Iowa Performance Tests for Soybeans, the “maturity groups” are designated to the nearest:
- whole number (1,2 etc.)
  - tenth (1.2, 2.3, etc.)
  - hundredth (1.23, 2.45, etc.)
  - none of these, maturity group is not used when comparing varieties
37. What would be considered a normal percent of oil in soybeans?
- 15%
  - 20%
  - 25%
  - 30%
38. Other than percent protein, what is the other component that varieties are tested for?
- % fat
  - % saturated fat
  - % energy
  - % oil
39. Maturity rankings are based on days to 95% brown pods after \_\_\_\_\_.
- August 1<sup>st</sup>
  - September 1<sup>st</sup>
  - September 15<sup>th</sup>
  - October 1<sup>st</sup>
40. Resistance to which pest is noted in the soybean yield trials?
- bean leaf beetle
  - Japanese beetle
  - aphids
  - cyst nematodes
41. If the % of mean score for a variety was 94 and the average yield was 47 bushels and the top yield was 56 bushels, what did this variety yield?
- 44.18 bushels
  - 44.70 bushels
  - 52.46 bushels
  - 54.46 bushels
42. SCN in soybeans attack the:
- leaves
  - roots
  - stems
  - Pods
43. A management practice to control the spread of SCN is:
- use a fungicide
  - treat the seed with rhizobia bacteria
  - clean the seed
  - clean equipment when going from field to field

44. SCN most likely came to the United States from what country?
- Argentina
  - Brazil
  - Mexico
  - Japan
45. A symptom of SCN in soybeans may be:
- stunted plants
  - yellow plants
  - less vigorous plants
  - all of these
46. Which of the following are nonhost crop(s) for SCN?
- corn
  - oats
  - alfalfa
  - all of these
47. In the Soybean Replant bulletin, it suggests a minimum stand of \_\_\_\_\_ plants per acre in early June is worth keeping and replanting should not be done.
- 73,000
  - 86,000
  - 95,000
  - 100,000
48. In Central Iowa, soybean planting should be completed by \_\_\_\_\_ to get maximum yield.
- early April
  - early May
  - late May
  - early June
49. If the hypocotyl is severed below the cotyledons in soybeans the plant will respond by:
- tillering
  - growing new cotyledons
  - branching from axillary buds
  - dying
50. Replant decisions should be based on:
- time of year
  - cost to replant
  - yield potential of the damaged crop
  - all of these

**SUBJECTIVE SCORE  
INSTRUCTOR USE ONLY**

100	90	80	70	60
50	40	30	20	10
9	8	7	6	5
4	3	2	1	0

(T) (F) KEY

1	A	B	D	E
2	B	C	D	E
3	A	C	D	E
4	A	C	D	E
5	A	C	D	E
6	A	C	D	E
7	B	C	D	E
8	A	C	D	E
9	B	C	D	E
10	A	C	D	E
11	A	C	D	E
12	A	B	C	E
13	A	C	D	E
14	B	C	D	E
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26	A	C	D	E
27	A	C	D	E
28	B	C	D	E
29	B	C	D	E
30	A	B	C	E
31	B	C	D	E
32	A	B	C	E
33	A	C	D	E
34	A	C	D	E
35	A	B	D	E
36	A	C	D	E
37	A	C	D	E
38	A	B	C	E
39	A	C	D	E
40	A	B	C	E
41	B	C	D	E
42	A	C	D	E
43	A	B	C	E
44	A	B	C	E
45	A	B	C	E
46	A	B	C	E
47	B	C	D	E
48	A	C	D	E
49	A	B	C	E
50	A	B	C	E

**PART 1**

**IMPORTANT**

USE PENCIL ONLY

- MAKE DARK MARKS
- ERASE COMPLETELY TO CHANGE
- EXAMPLE: A B C D E

TO USE SUBJECTIVE SCORE FEATURE:

- Mark total possible subjective points
- Only one mark per line on key
- 163 points maximum

EXAMPLE OF STUDENT SCORE:

100	90	80	70	60
50	40	30	20	10
9	8	7	6	5
4	3	2	1	0

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