

**North Carolina FFA Association**  
**2019 State Agronomy CDE Written Exam - KEY**

INSTRUCTIONS: There are 25 questions on this section of the event. Read each question carefully. **Select the best answer and mark the answer on the scantron form.** Each question is worth four (4) points. You have **25 minutes** to complete this section of the event.

1. The movement of water and air in the subsurface soil layer is:  
A. erosion  
**B. permeability**  
C. slope  
D. structure
2. Which is a characteristic of sandy textured soils?  
A. high moisture-holding capacity  
B. high nutrient-holding capacity  
**C. low moisture-holding capacity**  
D. small packed together soil particles
3. To be classified as Class I, the land slope must be less than:  
**A. 2%**  
B. 5%  
C. 8%  
D. 10%
4. How many square chains equal an acre?  
A. 1  
B. 5  
**C. 10**  
D. 50
5. The measurement of a field in the shape of a triangle are: base = 1000 ft., height = 150 ft. The area of the field is how many acres?  
**A. 1.72**  
B. 3.44  
C. 17.20  
D. 34.40

$A = \frac{1}{2} (\text{base} \times \text{height})$ $43,560$
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6. Wendy had problems getting wheat to grow in one area of her field. If she wants to send a soil sample to the laboratory to get recommendations to correct her problem, she should take cores or slices of soil from:
- A. all the different areas
  - B. all the areas except one
  - C. the entire field
  - D. the problem area**
7. Yellowing of the entire plant leaf and stunted growth are early indications of which nutrient deficiency on the crop?
- A. boron
  - B. iron
  - C. nitrogen**
  - D. phosphorus
8. Which nutrient is required to prevent blossom end rot in fruits?
- A. calcium**
  - B. cobalt
  - C. copper
  - D. magnesium
9. A soil test report indicates that a wheat crop needs 100 lbs. of 15-5-10 fertilizer per acre. The amount of phosphorus applied in lbs./acre is:
- A. 5**
  - B. 10
  - C. 20
  - D. 35
10. Water loss from leaf surface through evaporation is the plant process called
- A. absorption
  - B. photosynthesis
  - C. respiration
  - D. transpiration**
11. What type of flower has only male or only female flower parts?
- A. asexual
  - B. complete
  - C. incomplete**
  - D. pretty
12. Anchoring plants, storing food and absorbing water are functions of plant:
- A. flowers
  - B. fruits
  - C. leaves
  - D. roots**

13. Correct seeding rate for corn is important because rates that are too high will result in:
- A. bigger kernels
  - B. higher yields
  - C. increased costs**
  - D. more weeds
14. What mechanical pest control procedure is used to control weeds?
- A. cultivation**
  - B. fertilization
  - C. irrigation
  - D. spraying
15. Which crop needs little to no nitrogen fertilizer to produce high yields?
- A. corn
  - B. pasture
  - C. legume**
  - D. grain
16. How does crop rotation reduce production costs?
- A. custom harvesting
  - B. insect control**
  - C. machinery efficiency
  - D. marketing plan
17. Reduced yields, reduced quality, and spoilage are caused by:
- A. conventional tillage
  - B. plant pests**
  - C. poor marketing
  - D. soil samples
18. If corn is harvested too late, there is a problem with:
- A. broken stalks**
  - B. green stalks
  - C. high moisture
  - D. hot weather
19. If grains are harvested too early, there is a problem with:
- A. broken stalks
  - B. cold weather
  - C. high moisture**
  - D. low moisture

20. Proper pest control may increase cost per acre, but an advantage will be:
- A. higher interest
  - B. higher yields**
  - C. lower quality
  - D. lower yield
21. Plant roots take water from the soil through the process of:
- A. absorption**
  - B. photosynthesis
  - C. reproduction
  - D. respiration
22. The most efficient tool for collecting soil samples from a field is a:
- A. countersink
  - B. soil probe**
  - C. slotted screwdriver
  - D. garden hoe
23. A soil test report will include:
- A. cost of fertilizer
  - B. cost of lime
  - C. recommended planting time
  - D. suggested fertilizer rate**
24. A soil test report with a pH of 7.2 would be:
- A. extremely acid
  - B. extremely alkaline
  - C. mildly acid
  - D. mildly alkaline**
25. The three primary nutrients necessary for plant growth are:
- A. boron, calcium, and iron
  - B. chlorine, sulfur, and zinc
  - C. magnesium, manganese, and molybdenum
  - D. nitrogen, phosphorus, and potassium**