

2000

Iowa FFA Soil Career Development Event
(Mark the best answer on the score card)

- _____ 1. Which of the following is a TRUE statement concerning soil parent material?
- Loess is wind-blown silt-sized rock material that layers in distinct and identifiable layers.
 - Glacial drift is ground material left by glaciers sometimes divided into till and stratified drift.
 - Alluvium is material that has moved down a steep slope with gravity as the driving force.
 - Residuum is material formed in another place by weathering of bedrock and moved later.
- _____ 2. A vertical section exposing the various layers of a soil is called a:
- soil profile
 - soil horizon
 - soil tier
 - plant root zone
- _____ 3. An organic layer is designated as _____ under the new system of naming soil profile horizons.
- O
 - O1
 - O2
 - OA
- _____ 4. Land with a slope of 2-5% and needing erosion control practices is classed as:
- Class I
 - Class II
 - Class III
 - Class IV
- _____ 5. Which of the following is a TRUE statement relating to Class IV land?
- Colored purple on a land capability map.
 - Slope may be between 5-14 percent.
 - Is better adapted for hay or pasture most of the time.
 - Both b and c are correct.
- _____ 6. The color of a well-aerated B horizon soil should be:
- Uniform olive gray
 - Uniform dark gray
 - Yellowish – brown
 - Bluish gray
- _____ 7. Which of the following is NOT a limiting factor for septic tank absorption field:
- Shallow to bedrock
 - Has a seasonal high water table
 - Is slowly permeable
 - Soil depth of more than six feet

- _____ 8. When selecting a building site for homes with a basement, which of the following is a limitation?
- Shrink-swell of less than 9% volume change on wetting & drying.
 - Evidence of the water table at greater than or equal to 5 feet.
 - Hard bedrock found at a greater than or equal to 5 feet.
 - None of the above.
- _____ 9. Reeds, sedges, and cattails are an indication of which type of native vegetation?
- marsh
 - forest
 - prairie
 - transition
- _____ 10. In land judging, the depth of soil refers to the:
- Amount of erosion.
 - Amount of surface soil.
 - Depth suitable for root penetration.
 - Depth of subsoil.
- _____ 11. Which of the following statements is FALSE with reference to land capability classifications?
- Land capabilities identify the limitations and hazards of using land for agricultural purposes.
 - Class IIe land has a slope of 5-9 percent and needs erosion control practices.
 - Classes II, III, and IV are suitable for almost any use (including cropland).
 - Class VIII is so restricted that its use is limited to recreation, wildlife, or watershed purposes.
- _____ 12. Soils that readily form flexible ribbons of more than 3 inches long without separation:
- Are considered medium textured.
 - Contain at least 40% silt.
 - Contain at least 40% clay.
 - Have at least 40% organic matter.
- _____ 13. In regard to "texture", silt particles are:
- 0.002 to 0.05 mm in diameter.
 - 0.05 to 0.2 mm in diameter.
 - 0.05 to 2.0 mm in diameter.
 - less than 0.002 mm in diameter.
- _____ 14. The erosion classification is determined by the depth of the:
- C horizon
 - B horizon
 - A horizon
 - Surface run-off
- _____ 15. Land capability classes I, II, and III are not suited for:
- Cropland
 - Pastureland
 - Timber
 - They are suited for all the above uses.

- _____
16. Variation in subsoil color is usually affected by the:
- Organic matter content in the topsoil.
 - Air and water relationships in the soil.
 - Color of the A and/or the E horizons.
 - Distance from a terrace or intermittent draining way.
- _____
17. When you practice "conservation tillage", you:
- Leave part of the previous year's crop on the surface.
 - Are spending a great deal of money for a limited benefit.
 - Decrease the effectiveness of other erosion control practices.
 - Smooth the ridges and bury all residue.
- _____
18. Which of the following statements is TRUE concerning excessively drained soils?
- There is excellent water holding capacity and an olive brown color.
 - The texture of the subsoil is coarse or moderately coarse and the B horizon is brown in color.
 - The texture of the C horizon is fine or moderately fine and the color of the C horizon is olive.
 - The B horizon is uniform gray in color and has a medium to moderately fine texture.
- _____
19. In regard to soil parent material, alluvium is:
- Silt-sized rock material deposited by wind and stratified in layers.
 - Sediments deposited by running water which shows little or no stratification.
 - Material moved down steep slopes by gravity that shows little or no stratification.
 - Material deposited by running water that is stratified in layers.
- _____
20. "Corn Suitability Ratings" can be secured from:
- Your seed corn dealer.
 - Your income tax preparer.
 - Your county NRCS office.
 - Your soil judging score card.
- _____
21. Calcareous soil conditions can:
- Lower pH levels.
 - Increase the availability of phosphorus and iron.
 - Decrease the amount of nitrogen and phosphorus needed for corn or alfalfa.
 - Cause iron chlorosis in soybeans.
- _____
22. Land with a deep, somewhat poorly drained, medium textured soil with a 0-2 percent slope would be classified as:
- Class I
 - Class IIw
 - Class IIe
 - Class III
- _____
23. Which of the following statements is FALSE concerning uneroded or slightly eroded soils?
- It has the same potential and management needs as it had when the first settlers arrived.
 - Soils with a 0-2 percent slope usually have A horizon thicknesses of 7-12 inches.
 - Mixing of subsoil material usually is not found in the tilled layer if cultivated.
 - Mixing of subsoil material can occur in deeply tilled soils.

- _____ 24. The water-holding capacity of a soil is affected by soil texture. As the size of the soil particles decreases the water-holding capacity:
- decreases
 - increases
 - is not affected
 - remains the same
- _____ 25. Which of the following statements is TRUE concerning the practices to overcome soil limitations?
- It's assumed that all land will be used as intensively as possible by landowners & operators.
 - Use of erosion control practices makes it possible to decrease the frequency of row crops.
 - Contouring, strip cropping, & terracing are effective erosion controls on Class III & IV soils.
 - Planting high quality seed in narrow rows would be useful on Class VI, VII, & VIII soils.
- _____ 26. Land that is classified "medium" based upon its potential for intensive row cropping; can be row cropped:
- continuously
 - $\geq 50\%$ of the time
 - $< 50\%$ of the time
 - at no time
- _____ 27. Soils best suited to treat effluent in a septic tank absorption field should:
- Be located in a bottomland with just occasional flooding potential.
 - Be shallow to bedrock with a fine textured A horizon.
 - Be slowly permeable and have a high water table.
 - Be at least 6 feet deep and are well drained.
- _____ 28. Which of the following things DOES NOT happen if soil drainage is inadequate?
- Plant root growth is prevented because of poor aeration.
 - Buildings may settle.
 - Vehicles may get stuck.
 - None of the above.
- _____ 29. Which of the following statements is TRUE concerning surface features of soils?
- Some upland soils are flat enough to need artificial drainage.
 - Grassed waterways work well to help control erosion on bottomland soils.
 - Terrace soils are usually underlaid with enough clay that drought is not a concern.
 - Footslopes are generally considered droughty sites because of their landscape position.
- _____ 30. Which of the following factors influence the thickness of the A Horizon?
- climate and slope
 - vegetation and parent material
 - both A and B
 - none of the above
- _____ 31. Which of the following statements is FALSE concerning the E horizon?
- Lighter in color and higher in organic matter than the A horizon.
 - Typically gray in color and has relatively low soil fertility when compared to the A horizon.
 - Strongly developed E horizons are normally underlaid by high clay contents in the B horizon.

- d. All of the above are true.
- _____ 32. A three percent slope is described as:
- nearly level
 - gently sloping
 - moderately sloping
 - strongly sloping
- _____ 33. A "clinometer" is used to measure:
- soil depth
 - soil color
 - soil texture
 - slope
- _____ 34. A rule of thumb is that if individual sand grains can be seen, the sample consists of a minimum of:
- 15% silt
 - 25% silt
 - 15% sand
 - 5% sand
- _____ 35. A soil that is too wet in the spring:
- helps to develop and maintain a deep root system.
 - often aggravates drought problems in the summer
 - often helps the soil to stay wet during a summer drought.
 - will still be too wet in the fall for harvest.
- _____ 36. A few drops of dilute citric acid will:
- cause a calcareous soil to effervesce
 - emit bubbles of carbon dioxide.
 - both A & B.
 - none of the above.
- _____ 37. The Corn Suitability Rating scale ranges from _____, the best, to _____, the poorest
- 1, 100
 - 100, 1
 - 5, 100
 - 100, 5
- _____ 38. How many land capability classifications are there that are not suitable for cropland?
- 2
 - 3
 - 4
 - 5
- _____ 39. Estimate the percentage of crop residue in a soybean field using a 50-foot CAM-line using the following results of your three observations: 29, 27, and 31. The row spacing was 15 inches
- 29
 - 58
 - 27
 - 14.5

-
40. The most effective and least costly system to reduce soil erosion on level and gently sloping land is:
- a. conservation tillage
 - b. terracing
 - c. contouring
 - d. grass waterways

2000
Iowa FFA Soils Test
KEY

- | | |
|-------|-------|
| 1. b | 21. d |
| 2. a | 22. a |
| 3. a | 23. b |
| 4. b | 24. b |
| 5. c | 25. c |
| 6. c | 26. b |
| 7. d | 27. d |
| 8. d | 28. d |
| 9. a | 29. a |
| 10. c | 30. c |
| 11. b | 31. a |
| 12. c | 32. b |
| 13. a | 33. d |
| 14. c | 34. c |
| 15. d | 35. b |
| 16. b | 36. d |
| 17. a | 37. d |
| 18. b | 38. c |
| 19. d | 39. a |
| 20. c | 40. a |