

2016 Iowa FFA Soils Evaluation CDE Exam

1. Which of the following is true regarding soil horizons?
 - a. A horizon is darker in color and has more organic matter
 - b. B horizon is darker in color and has more organic matter
 - c. A horizon is higher in clay content and has a more dense structure
 - d. B horizon is higher in clay content and contains the most plant roots
 - e. None of the above are true

2. Landscape position is one aspect of evaluating the surface features of a certain tract of land. Identifying the correct landscape position will indicate:
 - a. If the soil is subject to flooding
 - b. If the soil is subject to potential erosion
 - c. If the soil is capable of producing corn and soybeans
 - d. A and B above
 - e. A, B, C above

3. What would be the best way to classify a tract of land in Northern Iowa described as deep, somewhat poorly drained, nearly level with medium and moderately fine textured soil?
 - a. Class I
 - b. Class II
 - c. Class IIw
 - d. Class IIe
 - e. Class IIIw

4. Which characteristic would have the greatest impact on the rate in which water moves through the soil profile?
 - a. The color of the B horizon
 - b. The native vegetation
 - c. The texture of the B horizon
 - d. The landscape position
 - e. All of the above

5. Silt sized particles are the result of the breaking down of larger particles. This process is called:
 - a. Bacterial decomposition
 - b. Stratification
 - c. Weathering
 - d. Soil decomposition

6. In evaluating building sites for houses with basements, bedrock is a limitation when soft bedrock is found within:
 - a. 3 feet or less
 - b. 5 feet or less
 - c. 6 feet or less
 - d. Bedrock is always a problem

7. Calcareous soil conditions can result in:
 - a. High pH levels
 - b. Iron chlorosis in soybeans
 - c. Reduced effectiveness in some herbicides
 - d. All of the above

8. An organic layer is designated as _____ under the new system of naming soil profile horizons.
 - a. O
 - b. O1
 - c. O2
 - d. OA

9. A soil that is too wet in the spring:
 - a. Helps to develop and maintain a deep root system
 - b. Often aggravates drought problems in the summer
 - c. Often helps the soil to stay wet during a summer drought
 - d. Will still be too wet in the fall for harvest

10. The Corn Suitability Rating ranges from _____, the best, to _____, the poorest.
 - a. 1, 100
 - b. 100, 1
 - c. 5, 100
 - d. 100, 5

11. Using strips of a less erosive crop to catch the soil that erodes from a cropped area is called _____.
 - a. Contouring
 - b. Strip cropping
 - c. Terracing
 - d. Strip buffering

12. An average loam soil contains
 - a. 50% sand, 30% silt, 20% clay
 - b. 40% sand, 30% silt, 30% clay
 - c. 33% sand, 33% clay, 33% silt
 - d. 25% sand, 40% silt, 35% clay

13. A conventional septic tank absorption field has laterals placed at a depth of _____ inches below the ground surface.
 - a. 12-24
 - b. 30-34
 - c. 34-40
 - d. 48-64
 - e. None of the above

14. The E horizon is all of the following except
- Lighter in color than A
 - Lower in organic matter than A
 - Contains significantly more clay than A
 - Found in forest soils and other intensely leached soils
15. Calculate the slope of a hill when in 80 feet of run the elevation drops 10 feet.
- 6%
 - 8%
 - 9.5%
 - 12.5%
16. A slope of 8% would be called
- Nearly level
 - Gently sloping
 - Moderately sloping
 - Strongly sloping
17. Productivity indexes reflect the physical and chemical properties of the soil in terms of commonly grown crops. In Iowa, this index is called:
- CBS
 - NRCS
 - SCS
 - CSR
18. A very slow rate of erosion under natural conditions is called:
- Rill erosion
 - Natural erosion
 - Geographical erosion
 - Geological erosion
19. Land may be placed in Class IIw because
- Wide terraces are needed
 - Additional conservation practices are required
 - Row crops yields will be limited
 - Tile drainage is needed
20. Soil judging consists of
- Evaluating certain properties of a soil and interpreting these evaluations into recommendations for land use
 - Evaluating differences in soils to determine limitations and best conservation practices
 - Estimating soil features, land capabilities and productivity to identify the limitations of a site
 - Classifying soils based on its properties and making recommendations for production and building sites

21. Organic matter:
- Decreases the absorption and retention of moisture and nutrients for plant growth
 - Enhances structural development and stability of soil aggregates
 - Reduces soil tilth
 - None of the above
22. In regard to "texture," silt particles are:
- 0.05 to 2.0 mm in diameter
 - 0.05 to 0.2 mm in diameter
 - 0.002 to 0.05 mm in diameter
 - Less than 0.002 mm in diameter
23. The R horizon is:
- Subsoil
 - Organic matter
 - Bedrock
 - None of the above
24. In regard to soil parent material, alluvium is:
- Ground up material left by glaciers
 - Materials moved down steep slopes by gravity
 - Sediments deposited by running water
 - Organic materials that accumulated in bogs
25. An example of a crop that is considered a legume is
- Field corn
 - Oats
 - Alfalfa
 - Barley
26. Of the crops listed, the most soil conserving crop in a crop rotation is
- Grass legume meadows
 - Grain sorghum
 - Corn for grain
 - Small grains
27. The landscape position most likely to accumulate alluvial material is
- Terrace
 - Intermittent drainageway
 - Upland
 - Bottomland
28. The number of land capability classes is
- 4
 - 6
 - 8
 - 10

29. A soil profile contains lighter colored material on top of darker material. The likely erosion class is
- Overwash
 - Uneroded
 - Moderately eroded
 - Severely eroded
 - Gullied
30. Bright brown or yellowish-brown subsoil colors indicate
- Well aerated conditions
 - Poor natural drainage
 - Poor root penetration
 - Highly fertile soils
31. Preparing the soil, planting, and cultivating crops around a hill perpendicular to the slope rather than up and down the hill
- Contour buffer strips
 - Contour farming
 - Strip cropping
 - Terracing
32. An earthen embankment that diverts runoff water from a specific place is a _____
- Diversion
 - Filter strip
 - Grass and sediment control basin
 - Terrace
33. Which of the following is not a true statement about a soil profile?
- It is a list of characteristics of a soil group
 - It is a vertical section through the layers that make up the soil
 - It extends down through the soil and plant root zones
 - It may be as shallow as a fraction of an inch
34. Which of the following is not a true statement about the influence native vegetation has on soil?
- It is possible to identify the native vegetation of a soil even though the soil has been under cultivation for a long period of time
 - After forest soil has been cleared and put under cultivation, it is virtually impossible to distinguish it from soils developed under grass or marsh conditions
 - A forested soil is usually more acid and has had more clay movement from the A horizon to the B horizon than a soil formed under grass
 - The effect of vegetation is strong enough to influence the chemical, physical, and biological characteristics of the soil

35. While judging soil, you discovered the following facts: 10 percent slope, moderately coarse A and B horizons, a severely eroded A horizon, excessively drained and less than 20 inches of useable soil. What land class would this soil most likely be?
- Class III
 - Class IV
 - Class VI
 - Class VII
36. A soil with a profile depth of 47 inches would be classified as:
- Very deep
 - Deep
 - Moderately deep
 - Shallow
37. Which of the following shrink-swell ratings would have a percent volume change of 14%?
- Very high
 - Low
 - Moderate
 - High
38. A soil contains over 12 inches of a black A horizon, underlain by gray colors with red redox features. What could be expected?
- Oxygen is always present in the top 12 inches
 - This soil has a high seasonal water table
 - The black A material has accumulated from elsewhere
 - None of the above
39. Usually the most fertile soil is found in the:
- A Horizon
 - B Horizon
 - C Horizon
 - R Horizon
40. A clinometer is a measuring device used to measure
- Soil depth
 - Soil texture
 - Soil residue
 - Slope

2016 Iowa FFA Soils Evaluation CDE Exam Key

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