1999
Iowa FFA Soil Career Development Event

(Mark the best answer on the score card)

1. With reference to surface features, landscape position describes:

   a. the location of trees and shrubs with regard to a septic tank absorption field
   b. the location of soil on a landscape and whether or not it is subject to flooding
   c. the use of terraces or dams to make interesting landscape designs
   d. the location of a building on a landscape

2. Identify which one of the following is NOT a true statement with reference to an upland soil.

   a. Some upland soils are low in fertility.
   b. Some upland soils are flat enough to need artificial drainage.
   c. Upland soils are normally the oldest and most strongly developed soils in the general area
   d. Upland soils may be subject to flooding.

3. Intermittent drainageways are areas where water flows through uplands and terraces during and after a rain. The water flow is wide and shallow. These areas become dry at other times although tile drainage may be required if crops are to be grown on them. What are sometimes used to protect these drainageways from erosion.

   a. more tiling
   b. more terraces
   c. grassed waterways
   d. narrow row cropping and mulch tillage

4. Which of the following would explain why a surface feature called a terrace soil might be droughty?

   a. Some terraces are droughty because they have gravel layers at shallow depths.
   b. Terraces contain flood deposits related to the time the stream was at that level.
   c. Terraces drain well because of their position in the landscape.
   d. Terraces are no longer subject to flooding.

5. If you just determined that the percent slope was 4.5 percent, the slope group would be:

   a. nearly level
   b. moderately sloping
   c. strongly sloping
   d. none of the above

6. Which of the following best describes the E horizon?

a. The eroded layer
b. A mineral horizon associated with intensely leached soils
c. Also known as the zero horizon because it is the bedrock on which the profile lies
d. The layers of soil which are well aerated and high in organic matter

7. Soil horizons can be distinguished because they differ from one another in such properties as:

a. hardness
b. structure
c. color
d. all of the above

8. Which one of the following is a true statement regarding horizons?

a. Usually a single soil profile will have all of the horizons and subhorizons that are possible.
b. The thickness of a soil horizon is never less than an inch.
c. There is no horizon designated as the M horizon.
d. An O horizon would normally be located below a B horizon.

9. Soil color is a good indicator of organic matter content up to about:

a. 20 percent
b 15-18 percent
c. 10-15 percent
d. 4-5 percent

10. The typical gray color and acid condition of an E horizon indicates that:

a. it has relatively high soil fertility in comparison to the thick dark A horizon
b. it has relatively low soil fertility in comparison to the thick dark A horizon
c. it is commonly underlaid by A horizons with much higher clay contents
d. it does not need lime or fertilizer to compensate for the conditions

11. The A horizon can be distinguished from the B horizon because of all of the following reasons except:

a. it typically has a darker color
b. it tends to have a more open structure
c. it tends to accumulate clay, and in some soils, humus and iron
d. it tends to accumulate organic matter but loses other materials by leaching

12. Well aerated soils have uniform, brightly colored subsoils-commonly a shade of:

a. dark gray or olive gray
b. grayish green or bluish gray
c. yellowish brown or brown
d. dusky red mottles

13. If some young soils do not have a B horizon, the B horizon section of the scorecard would be:

a. used for the 10 inch zone immediately below the A horizon
b. used for the upper 10 inches of the R horizon
c. used for the lower 6 inches of the C horizon
d. left blank

14. Soils are likely to be restrictive for most plants if they are:

a. less than 20 inches deep
b. over 40 inches deep
c. about 3 to 5 feet deep
d. Soils are never restrictive to plant growth.

15. One of the following is NOT a true statement about the influence that native vegetation has on soil.

a. 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 vegetation.
b. The effect of vegetation is strong enough to influence the chemical, physical, and biological characteristics of the soil.
c. 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.
d. 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.

16. Which one of the following is true about calcareous soil:

a. may have resulted from erosion that buried calcareous parent material below the surface or subsurface soil
b. can be identified by its darker color
c. soil pH is below neutral
d. can be identified positively by acid test

17. A soil mapping unit does NOT identify the:

a. soil type
b. slope
c. soil color
d. erosion class

18. Corn Suitability Ratings assume an adequate level of management. An index of 100 is reserved for those soils that:

a. can not be continuously row cropped
b. have high yield potential
c. have inadequate surface or subsurface drainage
d. are located in areas of least favorable weather conditions

19. According to the productivity index, a soil that should not be row-cropped more than 2 out of 5 years and has a 9 to 18 percent slope, would be classified as:

a. Unsuited
b. Low
c. Medium
d. High

20. The use of tile drainage or other means to remove excess water from flat or seepy spots on slopes is usually referred to as:

a. surface drainage
b. terracing
c. line-transect method
d. subsurface drainage

21. Soils best suited for treatment of effluent:

a. have good water and air relationships in both the top soil and subsoil
b. have a seasonal high water table, have slow permeability, and are shallow to bedrock
c. occur on upland landscapes, are more than 6 feet deep, and are well drained
d. both "a" and "c" are true

22. Soils that are most desirable as a source of topsoil for covering disturbed areas so vegetation can grow are:

a. soils with profile depths of 40 inches or more
b. dark A horizons 14 inches or more thick
c. in the medium textural group
d. all of the above

23. Organic matter:

a. decreases the absorption and retention of moisture as well as nutrients for plant growth
b. enhances structural development and stability of soil aggregates
c. reduces soil tilth quality
d. all of the above

24. A farming method where last year's crop residue are intentionally left on the field is called:

a. poor farming
b. contour farming
c. residue management
d. conventional tillage

25. Farming sloping cropland on the contour can reduce soil loss by:

a. only 10% on gentle slopes
b. only 25% on gentle slopes
c. as much as 50% on gentle slopes
d. as much as 70% on gentle slopes

26. A level line around a hill or slope laid out and marked by a surveyor to establish a line for the farmer to follow when planting on the contour, is called:

a. cam line
b. chalk line
c. all of the above
d. none of the above

27. Conservation tillage is any tillage and planting system that leaves at least _____% of the soil surface covered by the previous year's crop residue.

a. 30
b. 25
c. 15
d. 10

28. For contour striperopping, if your crop residue cover was 40% and your slope was 10%, what should be your maximum width of row crop strip?

a. 100 feet
b. 80 feet
c. 60 feet
d. contour stripcropping not recommended in such situation

29. Planting windbreaks as a soil conservation practice will also:

a. conserve energy
b. give shelter to livestock
c. control snowdrifts
d. all of the above

30. Which of the following is a "cool season grass" for pasture planting?

a. Smooth bromegrass
b. Switchgrass
c. Big bluestem
d. Alfalfa

31. Water and sediment control basins are used for all of the following except:

a. any areas suited to terrace systems
b. trap sediment
c. reduce gully erosion
d. reform the land surface

32. According to the estimates for installation costs found in the "Conservation Catalog", which conservation practice would cost more per acre?

a. grass waterways
b. contour stripcropping
c. cover crops
d. filter strips

33. Farmers now have conservation compliance plans for their land. These plans:

a. must be followed carefully for 10 years before being revised
b. outline the decisions the farmer has made to show which conservation practices will be used and when they will be implemented
c. are to be implemented with the USDA paying 100% of the expenses
d. all of the above

34. Land which is colored blue on land capability maps:

a. usually must have crops rotated with more soil conserving crops or have intensive practices installed such as terraces
b. needs erosion control such as contouring and conservation tillage. Land in this class may need tile drainage.
c. can be used occasionally for cropland under careful management but is better suited for hay or pasture most of the time
d. is not suited for cropland but is likely to be damaged by pasture or woodland use

35. Soils whose volume change by more than _____ percent will affect the stability of basement walls, foundations, patios, sidewalks, and concrete floors anchored to the ground.

a. 2
b. 4
c. 7
d. 9

36. The topsoil is likely to be the most permeable layer of soil in the profile. This means that it:

a. is high in plant nutrient content
b. is usually hard and dry
c. has high water holding capabilities
d. none of the above

37. One of the following would be a limiting factor for a conventional septic tank absorption field:

a. permeable soil
b. medium textured soil
c. water table at 4 foot depth
d. none of the above

38. For conservation compliance, residues are measured:

a. pre plant
b. after planting
c. just before harvest
d. post harvest

39. Estimate the percentage of crop residue in a corn field, using the CAM-line method, when the results of three observations were 44, 39, and 28. The row spacing was 30 inches.

a. 27%
b. 30%
c. 34%
d. 37%

40. How many land capability classes are there based on the degree of hazard or limitation for use of the land?

a. one
b. four
c. six
d. none of the above