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IOWA FFA SOILS JUDGING CONTEST

1. Surface features are soil characteristics that can be identified by:
 - a. feeling the soil texture
 - b. examining the internal layering of soil
 - c. observing the landscape
 - d. the crops grown

2. A soil profile is:
 - a. a record of crop yields
 - b. the way the land lays
 - c. data related to water pollution
 - d. a vertical section through the layers of the soil

3. Land capability classification is a system that:
 - a. identifies the limitations and hazards of using the land for agricultural purposes
 - b. divides the state into grain producing areas, hay and pasture regions, and wooded areas
 - c. enables soil scientists to name soils
 - d. became outdated and was discontinued due to the widespread use of commercial fertilizer

4. One of the following is not a true statement concerning the use of a terrace structure for erosion and runoff control:
 - a. Reduces erosion by shortening the length of slope.
 - b. Provides little or no benefit on land with less than a 9 percent slope.
 - c. Intercepts runoff water and disposes of it safely or holds it until it infiltrates.
 - d. May be effectively utilized on slopes of 2 percent gradient and steeper to reduce water runoff and erosion.

5. All but one of the following are soil limitation factors that should be taken into consideration:
 - a. depth of bedrock
 - b. height of water table
 - c. possibility of flooding
 - d. thickness of the top soil

6. 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 a building on a landscape.
 - c. the location of soil on a landscape and tells whether or not it is subject to flooding.
 - d. the use of berms or dams to make interesting landscape designs.

7. One of the following is not a true statement about soil profiles:
 - a. Most Iowa soils have A, B and C horizons.
 - b. A single soil profile may not necessarily have all the horizons and subhorizons.
 - c. The horizon is a vertical section of the soil.
 - d. Factors influencing the development of a profile include weathering, leaching, and plant and microbial activity.

8. The material from which all soils originate is referred to as:
 - a. Rock
 - b. Organic matter
 - c. Solar dust
 - d. Parent material

9. Soils that show influence of both grasses and trees in their development are classified under this native vegetation category:
 - a. Forest
 - b. Prairie
 - c. Transition
 - d. Marsh

10. Surface drainage can be defined as the escape of water by flowing across the soil surface. The flow is influenced least by which of the following?
 - a. soil texture
 - b. slope
 - c. surface roughness
 - d. vegetative cover

11. One of the following is not a true statement about calcareous soil:
 - a. Calcareous conditions limit the availability of phosphorus and iron.
 - b. Calcareous soils are low in pH because of the neutralizing effect on acid.
 - c. Calcareous soils can be identified by the effervescence when the acid test is used.
 - d. Calcareous soils are lighter in color due to calcium carbonate than otherwise similar soil.

12. Determine the percent of slope when the elevation of a slope drops 16 feet in 80 feet of slope.
 - a. 10%
 - b. 14.5%
 - c. 20.0%
 - d. 23.5%

13. Which of the following best describes the O horizon?
- a. The surface of soil
 - b. A soil layer dominated by organic material
 - ✓ c. Also known as the zero horizon because it is the bedrock on which the soil profile lies
 - d. The layers of soil which are well aerated and high in oxygen
14. The mineral horizon which has the darkest color is:
- a. A horizon
 - b. B horizon
 - ✓ c. C horizon
 - d. O horizon
15. The B horizon is also known as:
- a. subsurface soil
 - ✓ b. parent material
 - c. subsoil
 - d. bedrock
16. A former flood plain which is no longer subject to flooding because the stream bed has eroded too deep to overflow on the area is called:
- a. bottomland
 - b. intermittent drainageway
 - c. contour
 - d. terrace
17. Soil texture is determined by:
- a. the amount of organic matter in the soil
 - b. the moisture content in soil
 - c. the conservation practices followed
 - d. the proportions of sand, silt and clay
18. The higher clay content of the B horizon is due to:
- a. weathering and leaching of soil from the surface layers
 - b. the effect of plant roots
 - c. microbial activity in the root zone
 - d. glacial action
19. The depth of soil is defined as:
- a. the thickness of the top soil
 - b. the thickness of soil above a layer that stops plant root development
 - c. the top 3 feet of soil
 - d. the depth down to the C horizon
20. A dominantly silt-sized rock material transported and deposited by the wind is called:
- a. alluvium
 - b. volcanic ash
 - c. loess
 - d. residuum

21. When subsoil has a gray color, this is an indication that the soil:
- a. has poor internal drainage
 - b. is well aerated
 - c. has a coarse textured B and C horizon
 - d. has a high organic material content
22. A very slow rate of soil erosion which, for the most part, is in equilibrium with soil formation is called:
- a. wind erosion
 - b. accelerated erosion
 - c. geological erosion
 - d. slight erosion
23. What is land called that occurs downslope from some adjacent land and receives sediment from those adjacent lands?
- a. alluvium
 - b. colluvium
 - c. glacial drift
 - d. overwash
24. In the land capability classification, a class that is suitable for nearly any use because it has no special hazards or limitations is:
- a. Class I
 - b. Class IV
 - c. Class V
 - d. Class VIII
25. A Corn Suitability rating of 100 is reserved for soils:
- a. located in areas of most favorable weather conditions
 - b. that have high yield potential
 - c. that can be continuously row-cropped
 - d. All of the above.
26. A conservation practice which consists of a single strip of meadow to keep silt out of a pond is called:
- a. a grassed waterway
 - b. contouring
 - c. strip cropping
 - d. Both a and c
27. The practice of leaving plant residue on the surface or leaving ridges and surface roughness to reduce the loss of soil and water is called:
- a. mold board plowing
 - b. conservation tillage
 - c. contouring
 - d. no-till

28. An instrument which is used to estimate the percentage of residue on the surface of soil is known as a

- a. meterstick
- b. CAM-line
- c. surveyor's transit and rod
- d. Both a and b

29. Regardless of the method used to estimate residue cover, the estimate should be based upon a minimum of observation:

- a. 3
- b. 6
- c. 9
- d. 12

30. The change in volume of a soil during wetting and drying is referred to as:

- a. weathering
- b. soil capacity
- c. shrink swell
- d. None of the above.

31. A droughty soil is one that:

- a. lacks water holding capacity
- b. holds too much water
- c. is infertile
- d. is too steep for cropping purposes

32. For the most satisfactory growth of most crops, the soil depth should be:

- a. 5 inches
- b. 10 inches
- c. 20 inches
- d. over 36 inches

33. One of the following is not a true statement about the influence native vegetation has on soil:

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

34. Land capability subclasses are used to denote the type of hazard or limitation restricting use of soils grouped in:

- a. all eight classes
- b. only Classes I through IV
- c. Classes II through VIII
- d. Classes VI through VIII

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

- a. 12-foot soil depth
- b. water table at 4-foot depth
- c. permeable soil
- d. medium textured soil

36. Forest soil commonly has a layer of leached soil that is lighter in color than the soil above it or the subsoil below. This layer is called the:

- a. A horizon
- b. B horizon
- c. C horizon
- d. E horizon

37. The stability of basement walls, foundations, posts, sidewalks and concrete floors anchored to the ground are adversely affected if the volume change of soil during wetting and drying is:

- a. three percent or less
- b. six percent or less
- c. greater than nine percent
- d. between 100 and 300 percent

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

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

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

- a. is usually hard and dry
- b. will allow water and air to enter and pass through
- c. is high in plant nutrient content
- d. has high water holding capabilities

40. When giving a soil sample the "ribbon test" for soil texture groups; in which group should a soil that feels smooth, floury, and with a little grit in it be classified?

- a. moderately coarse
- b. medium
- c. moderately fine
- d. fine