2004
Iowa FFA Soil Career Development Event

Please mark the best answer on your score card.

1. Upland is the upper part of the landscape including summits and sideslopes, and
   a. may be subject to erosion
   b. cannot receive stream deposits because it is too high to be flooded
   c. normally has the oldest and most strongly developed soils in the immediate vicinity
   d. all answers are correct

2. In regards to landscape position, bottomland refers to
   a. areas where water flows through uplands
   b. relatively moist sites because they receive seepage and runon water from above
   c. soil material that shows little or no soil profile development
   d. the B horizon

3. Land categorized as being in the footslope landscape position is
   a. an area of moderate slope between a relatively steep area above and a relatively flat area below
   b. usually shallow and sandy
   c. the land which may be covered with water when the stream overflows it's banks
   d. a remnant of a former bottomland and represents a time when the stream was at a higher level

4. The percent slope can be calculated from distance and elevation data.
   a. a 4 foot rise in 25 feet of distance is a 16% slope
   b. a fall of 2 feet every 50 feet of run would be a negative 2% slope
   c. a rise of 1 foot in every 75 feet of run would be a 7.5% slope
   d. a 3 foot rise in every 75 feet of distance would be a 1.5% slope

5. The R Horizon is
   a. loose underlying material
   b. hard bedrock
   c. subsoil
   d. a soil horizon dominated by organic material

6. The E horizon
   a. is usually lighter in color , higher in organic matter, and contains more clay than the A horizon
   b. is usually light in color due to the natural color of organic matter
   c. can commonly be found in forested soils, and has high fertility
   d. may stay wet for a period of time, which helps leach and acidify the horizon

7. The proportions of sand, silt, and clay in soil determines its
   a. aggregates
   b. structure
   c. crystallization
   d. texture

8. Sand particles
   a. are similar to table salt crystals
   b. feel smooth like flour
   c. are the largest of the organic matter separates
   d. are plastic and sticky when wet

9. The properties of _____ tend to be strongly expressed compared to the amount present.
   a. cobbles
   b. sand
   c. silt
   d. clay

10. The water-holding capacity of a soil is affected by soil texture. As the size of the soil particles decreases, the water-holding capacity
   a. decreases
   b. increases
   c. remains the same
   d. is not affected

11. Soils that form little or no ribbon when texturing, and that are low in sand are
   a. coarse
   b. moderately coarse
   c. medium
   d. moderately fine
   e. fine

12. Bright yellow or yellowish-brown subsoil colors indicate
   a. well aerated soils
   b. poor natural drainage
   c. poor root penetration
   d. highly fertile soil

13. Soil parent material deposited by running water is
   a. glacial drift
   b. loess
   c. alluvium
   d. colluvium

14. Colluvium was likely the parent material for soil found in this landscape position
    a. upland
    b. intermittent drainageway
    c. footslope
    d. terrace

15. Loess
    a. is mostly silt-sized mineral material
    b. was transported and deposited by wind
    c. is rather uniform material with little or no apparent layering
    d. all of the above answers are correct

16. Soils whose native vegetation was forest
    a. usually have no more than 5 to 7 inches of an A horizon
    b. usually do not have an E horizon
    c. have more organic matter than a transition soil
    d. all of the above answers are correct

17. Geologic erosion
    a. is a major concern of landowners near urban areas across the United States
    b. and soil formation were generally in equilibrium before settlers arrived
    c. and soil formation have been out of balance only in the past 20 years
    d. is a simulated process utilizing GPS technology

18. Calcareous soil conditions
    a. lower the soil pH
    b. can result in iron chlorosis in soybeans
    c. maximizes the availability of phosphorus and iron
    d. can be identified by effervesce when conducting the hydrogen acid test

19. On land capability maps, Class III land is colored
    a. blue
    b. brown
    c. green
    d. red

20. Class IIw land
    a. has a slope of 2-5%
    b. is identified by a green color on land capability maps
    c. needs tile drainage
    d. likely needs an erosion control practice

21. A soil has problems involving climatic limitations, soil limitations, and wetness problems. The appropriate subclass for this soil is
    a. c
    b. s
    c. w
    d. all of the above answers

22. Corn Suitability Ratings
    a. are useful when comparing land tracts within a state
    b. range from 0 to 90
    c. are designed for use with both irrigated and non-irrigated land tracts
    d. are designed for use with all crops, including corn, soybeans, small grains, and vegetables

23. Contouring does not work well as a single practice to overcome soil limitations where slopes are irregular or on rolling topography where slopes exceed
    a. 5%
    b. 9%
    c. 14%
    d. 18%

24. On slopes up to 5%, the single most effective and least costly system to reduce soil erosion is
    a. grass waterways
    b. contouring
    c. strip cropping
    d. conservation tillage

25. Farmer Gruis uses the meterstick method to estimate surface residue. He farms with 30 inch rows and finds that there is crop residue cover on the edge of the meterstick from 25 to 30 and 55 to 62 at one location, from 40 to 44 and 55 to 61 at a second location, and 7 to 10, 35 to 37, and 75 to 81 at a third location. Farmer Gruis has _____% crop residue cover.
    a. 10
    b. 11
    c. 12
    d. 33

26. Shrink-swell of a soil is a factor to consider when selecting a building site for a home with a basement, and
    a. excess volume change of a soil during wetting and drying will affect the stability of the basement walls, foundation, patio, sidewalks, siding, and shingles
    b. a shrink-swell of greater than 9% is a limitation
    c. soils with textures of fine, moderately fine, medium, and moderately coarse would indicate a limitation
    d. all of the above answers are correct

27. Limitations for conventional septic tank absorption fields include
    a. bedrock within 6 feet of the soil surface
    b. possibility of flooding
    c. evidence of water table within 5 feet of the soil surface
    d. all of the above answers are correct

28. Soils suited for a source of topsoil
    a. have dark or black A horizons greater than 14 inches thick
    b. have textures that are medium and moderately fine
    c. have no evidence of a water table in the upper 14 inches of the A horizon
    d. all of the above answers are correct

29. Predict your percent ground cover after planting corn using the following information:
    a. 45%
    b. 36%
    c. 29%
    d. 26%

Tillage Operation	Ground Cover Remaining
After harvest	.90
Winter decomposition	.80
Spring chisel	.50
Plant	.80

30. Earthen structure that interceps runoff on moderate to steep slopes by transforming long slopes into a series of shorter slopes is a
    a. contour cross slope enbankment
    b. diversion
    c. filter strip
    d. terrace

31. Preparing the soil, planting, and cultivating crops around a hill nearly on the level rather than up and down the hill is
    a. contour buffer strips
    b. contour farming
    c. contour stripcropping
    d. terracing

32. A system of growing crops in even width strips (alternating meadow/close growing crop with row crop) on the contour is
    a. contour buffer strips
    b. contour farming
    c. contour stripcropping
    d. terracing

33. Properly maintain grassed waterways by
    a. using the same vehicle tire tracks in the waterway to minimize lose of ground cover
    b. mowing the grass to maintain a height of 8 inches
    c. fertilizing every 4 weeks
    d. bringing row crop patterns perpendicular into the waterway

34. All of the following are high residue crops EXCEPT
    a. alfalfa
    b. corn (grain)
    c. oats
    d. soybeans

35. The frontslope can be farmed and the backslope can provide cover for wildlife with this terrace
    a. broadbase terrace
    b. grassed backslope terrace
    c. narrow base terrace
    d. storage tearrace

36. When managing windbreaks, consider planting a variety of species to
    a. lessen the chance of total loss from drought, insects, or disease
    b. take advantage of the tall-short-tall principle of space management
    c. form the snow trap on the leeward side of the windbreak
    d. all of the above answers are correct

37. An earthen embankment that diverts runoff water from a specific place is a
    a. diversion
    b. filter strip
    c. grass and sediment control basin
    d. terrace

38. Filter strips
    a. are strips of row crop designed to remove sediment from runoff
    b. can be a minimum of 5 foot wide
    c. are strips of vegetation used on cropland next to a body of water to reduce sediment loads
    d. can be used to treat air pollution as part of a terrace system next to a livestock facility

39. Conservation tillage is a cropping system that leaves at least _____% ground cover after planting
    a. 10
    b. 20
    c. 30
    d. 40

40. A crop of close-growing grasses, legumes, or small grains grown to control soil erosion during periods when major crops do not furnish enough protection for the soil is a
    a. cover crop
    b. double crop
    c. filter crop
    d. mulch crop

2004
Iowa FFA Soil Career Development Event

Answers

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