

2003 Iowa FFA Soil Career Development Event
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Please mark the best answer on your score card.

1. The Natural Resource Conservation Service (NRCS) is associated with and financed through
 - a. Iowa State University (ISU)
 - b. Department of Natural Resources (DNR)
 - c. United States Department of Agriculture (USDA)
 - d. National Land-Grant System (NLGS)

2. A terrace designed as a channel to slow runoff water and carry it to a stable outlet like a grassed waterway is called a
 - a. Gradient terrace
 - b. Narrow base terrace
 - c. Grassed backslope terrace
 - d. Broadbase terrace

3. A well-established grassed waterway is beneficial because it
 - a. Slows runoff and causes absorption
 - b. Channels the water away from field crops
 - c. Protects the soil from concentrated flow
 - d. Has the ability to utilize the excess water for its root zone

4. An example of a crop that is considered a legume is
 - a. Field corn
 - b. Oats
 - c. Alfalfa
 - d. Barley

5. In an effort to maintain key contour lines, which practice is recommended by NRCS?
 - a. Establish a permanent strip of grass along the key contour lines
 - b. When moldboard plowing, leave a dead furrow for a contour line
 - c. Mow contour lines at least once per growing season
 - d. Start field work at the contour line and work away from the contour line

6. Buffer strips not only reduce sheet and rill erosion by as much as 30%, they also
 - a. Benefit the farmer by breaking the field up into smaller sections
 - b. Provide an outlet for water runoff
 - c. Establish a way to rotate crops
 - d. Provide wildlife with food and cover

7. The key to conservation tillage is
 - a. Planting and harvesting high residue crops
 - b. Managing the previous years crop residue
 - c. Using slower equipment speeds to leave residue on the surface
 - d. Adjusting field equipment to increase the amount of residue on the surface

8. Of the crops listed, the most soil conserving crop in a crop rotation is
 - a. Grass legume meadows
 - b. Grain sorghum
 - c. Corn for grain
 - d. Small grains

9. A band or strip of perennial vegetation, usually grass or legumes, next to cropland on the outside of the field is called a
 - a. Filter strip
 - b. Fieldborder
 - c. Cover crop
 - d. Diversion

10. Of the practices listed below, which practice has the lowest average cost to establish?
 - a. Tree planting (hardwoods per acre)
 - b. Filter strip (per acre)
 - c. Grass planting (per acre)
 - d. Contour farming (per acre)

11. The landscape position most likely to accumulate alluvial material is
 - a. Footslope
 - b. Intermittent drainageway
 - c. Upland
 - d. Bottomland

12. If the elevation between two slope flags is 4.5 feet and the distance between the same flags was 50 feet, for the purpose of a soil judging contest the slope for that sight would be considered
 - a. Nearly level
 - b. Gently sloping
 - c. Moderately sloping
 - d. Strongly sloping

13. Soil profiles are composed of various layers of soil called
 - a. Soil parent material
 - b. R-horizons
 - c. Profile horizons
 - d. Soil horizons

14. The soil particle that tends to be most expressed when compared to the amount present is
- Sand
 - Silt
 - Clay
 - Gravel/rock
15. When compared to the A horizon, typically the B horizon's texture has a
- Higher proportion of clay
 - Higher proportion of silt
 - Higher proportion of sand
 - Smaller proportion of water
16. The most accurate means of determining soil texture is through
- Mechanical analysis
 - Ribbon testing
 - Munsell book
 - Soil Textural Triangle
17. The soil that is usually more acid and has more clay movement from the A horizon to the B horizon than a soil formed under similar conditions is usually a
- Forest soil
 - Transition soil
 - Prairie soil
 - Marsh soil
18. If a landscape position at a judging site was determined to be a footslope, most likely the soil parent material would be
- Loess
 - Alluvium
 - Colluvium
 - Residuum
19. A soil with a mixture of sand, silt, and clay that exhibits the properties of all three materials is called
- Loam
 - Silty clay loam
 - Medium textured
 - Sandy silty clay
20. Which of the following is not a master soil horizon?
- B horizon
 - C horizon
 - D horizon
 - O horizon

21. Of the following, which soil texture would have the highest water holding capacity?
- Sandy loam
 - Silt loam
 - loam
 - Clay loam
22. The primary benefit of surface residue is that it
- Uses less mechanical action on the crop residue
 - Takes fewer trips across the field
 - Protects soil from wind and water erosion
 - Aids in maintaining soil moisture
23. Which is not a distinguishing characteristic of a soil horizon
- Texture
 - Structure
 - Hardness
 - Leaching
24. Soils whose volume change by more than 9 percent will affect houses with basements. This problem is due to
- Shrink-swell
 - Water table
 - Internal and external soil drainage
 - Weight of the house and its basement
25. Limitations for conventional septic-tank absorption fields are important because
- Untreated affluent could negatively impact the water table
 - Rural water and septic is not available for everyone
 - Fines can be levied by the Environmental Protection Agency (EPA)
 - Over-the-hill (OTH) plumbing is not legal in Iowa
26. For conservation compliance, residues are measured
- Before planting
 - After harvest
 - When the conservation plan is reviewed
 - After planting
27. At a judging site, the thickness of the A horizon is determined to be 6.5 inches. An E horizon has also been identified and its thickness has been determined to be 4.5 inches. Based on the information, what degree of thickness should be marked on the soil judging score card?
- Thin
 - Moderately Thin
 - Moderately Thick
 - Thick

28. A very slow rate of erosion under natural conditions is called:
- Rill erosion
 - Natural erosion
 - Geological erosion
 - Geographical erosion
29. Calcareous soils have a high lime content. The best way to determine if a soil is calcareous is to test it with
- Highly choleric acid
 - Hydrogen chlorine acetate
 - Hydrochloric acid
 - Hydrocarbon acid
30. The field test method of determining soil texture is called
- Ribbon test
 - Texturing test
 - Kneading test
 - Soil testing
31. With reference to land capability, when the subclass symbol is “e” is used with the class number it means that
- an E horizon is present
 - the climate is not appropriate
 - texture is a limitation
 - erosion is a hazard
32. The accumulation of clay in the subsoil is due to
- Glacial deposits
 - Decomposition of minerals and organic matter
 - The percent of material from which soil is developed
 - The effect of percolating water removing clay from the upper regions of the soil profile
33. The loose underlying material in a soil profile is called the
- C horizon
 - D horizon
 - R horizon
 - O horizon
34. When water has an avenue to escape across the soil surface, but the surface is quite rough or vegetation impedes its flow (water may stand on the soil surface for several hours after a rain), the surface drainage is classified as
- Rapid
 - Medium
 - Slow
 - Ponded

35. Which of the statements below is not an accurate statement regarding the typical properties of clay soils?
- Usually fertile but hard to work because they are sticky and plastic when wet and hard when dry
 - Likely to have low permeability to air and water
 - High in resistance to root penetration
 - Easy to cultivate but low in fertility
36. Inadequate drainage produces
- Waterlogged soil that is likely to enhance plant maturity at harvest
 - Waterlogged soil that prevents growth of plant roots because of poor aeration
 - Waterlogged soils that cause peat and muck soils which are more productive
 - Ap horizons
37. The number of land capability classes is
- 4
 - 6
 - 8
 - 10
38. A landscape position that may be covered with water when a stream overflows its banks is called
- Terrace
 - Footslope
 - Intermittent drainageway
 - Bottomland
39. External soil characteristics that can be identified by observing the landscape are referred to collectively as
- Internal features
 - Profile traits
 - Textural differences
 - Surface features
40. In estimating surface crop residue, the number of observations one should make at each site is
- 1
 - 2
 - 3
 - 4

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KEY

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