

Iowa FFA Soil Career Development Event 2008

1. In Iowa, corn suitability ratings for soil mapping units specifies
 - a. natural weather conditions
 - b. surface and subsurface drainage installed where needed
 - c. soils on lower landscape positions not subject to flooding to frequent damaging floods
 - d. no land leveling or terracing

2. Soils which have partially decomposed organic materials in the O and or A horizon may be classified as
 - a. marsh soils
 - b. permeable
 - c. moderately eroded
 - d. calcareous
 - e. none of the above

3. The thickness of the soil horizons is influenced by
 - a. climate
 - b. vegetation
 - c. slope and position
 - d. parent material
 - e. all the above

4. Slopes may be gentle to steep, short or long, and smooth and variable. All of these characteristics influence
 - a. soil development
 - b. runoff
 - c. erosion
 - d. land use
 - e. all the above

5. A favorable subsoil
 - a. is always high in nutrients, organic matter, air, and water
 - b. may become saturated for an extended period of time but is good for plant growth if it has a high nutrient level
 - c. must retain enough water for plant growth but will not permit excess water to drain out so air and roots can enter and roots can grow and develop
 - d. all of the above
 - e. none of the above

6. An average loam soil contains
 - a. 40 percent sand, 40 percent silt, 20 percent clay
 - b. 40 percent sand, 40 percent clay, 20 percent silt
 - c. 20 percent sand, 40 percent silt, 40 percent clay
 - d. 50 percent sand, 30 percent silt, 20 percent clay
 - e. none of the above

7. A clinometer is a measuring device you use to measure
 - a. soil depth
 - b. soil texture
 - c. soil residue
 - d. slope
 - e. none of the above

8. Land with a slope of 5-14 percent with the possibility of difficult drainage would be class
 - a. I
 - b. II
 - c. III
 - d. IV
 - e. None of the above

9. In most cases the most fertile soil is found in the following horizon

- a. A
- b. B
- c. C
- d. E
- e. R

10. A vertical section exposing the various layers of a soil is called

- a. root zone
- b. soil horizon
- c. soil profile
- d. subsurface soil
- e. none of the above

11. Water holding capacity of the soil is affected by the soil texture.
As the particles decrease in size, the water holding capacity

- a. increases
- b. decreases
- c. not affected by
- d. all the above

12. Land with a limitation related to either water or wind erosion would
have a subclass designation of

- a. c
- b. w
- c. e
- d. s
- e. none of the above

13. Productivity indexes reflect the physical and chemical properties of the soil in terms of commonly grown crops. In Iowa, the index is called

- a. ASCS
- b. NRCS
- c. RSC
- d. IPI

14. The best example of an intermittent drainageway is a

- a. cover crop
- b. grass waterway
- c. filter strip
- d. buffer strip

15. The R horizon is

- a. hard bedrock
- b. rating soil
- c. loose underlying material
- d. all the above
- e. none of the above

16. The color of this horizon is a good indicator of the air and water ratio in the soil

- a. A
- b. B
- c. C
- d. E
- e. None of the above

17. There are _____ land capability classes based on the degree of hazard or limitation for use of the land
- a. 4
 - b. 5
 - c. 6
 - d. 8
18. Spots of one or more contrasting colors on a background of another color is called
- a. potholes
 - b. ribbons
 - c. kneaded samples
 - d. mottles
 - e. none of the above
19. The field test method of determining soil texture is
- a. ribbon test
 - b. kneaded sample
 - c. pothole
 - d. mottles
 - e. none of the above
20. As a general rule of thumb, if individual sand grains can be seen, the sample usually contains at least a minimum of _____ percent sand.
- a. 2
 - b. 5
 - c. 9
 - d. 15
 - e. none of the above

21. Soils generally suited for a source of topsoil

- a. generally have more than 40 inches of soil depth
- b. have textures that are in the medium category
- c. have a dark or black A horizon color
- d. all the above
- e. none of the above

22. Shrink swell of a soil relates to the percent of volume change during wetting and drying. Soils whose volume change by more than _____ percent will affect the stability of basements, foundations, and concrete floors.

- a. 2
- b. 4
- c. 9
- d. 15

23. If a soil has a munsell color of 4, it would be classified as

- a. Fine
- b. moderately fine
- c. medium
- d. coarse
- e. none of the above

24. Class III land is fairly good land and

- a. may be between 5-14 percent slope
- b. may have clayey textures that make it difficult to work
- c. may be clayey and on a 0-1 percent slope
- d. may be shallow and sandy and therefore cause droughtiness
- e. all the above

25. Soils that form little or no ribbon and are obviously low in sand must be

- a. high in silt and coarse textured
- b. high in clay and fine textured
- c. high in sand and medium textured
- d. none of the above

26. The E horizon is all of the following except

- a. lighter in color than A
- b. lower in organic matter than A
- c. contains more clay than A
- d. found in forest soils and other intensely leached soils

27. A soil profile is

- a. the soil's surface features
- b. the landscape position of the soil
- c. composed of various layers called soil horizons
- d. the major factor in determining which tillage practices are best suited for the slope.
- e. none of the above

28. In regard to soil parent material alluvium is

- a. ground up materials left by glaciers
- b. material formed in place by the weathering of bedrock
- c. silt sized rock material deposited by wind
- d. organic materials accumulated in bogs
- e. none of the above

29. The native vegetation of soils that show the influence of both grass and trees is called
- forest
 - prairie
 - marsch
 - residuum
 - none of the above
30. When using the ribbon test for soil texture, a smooth floury feel would indicate the presence of
- clay
 - sand
 - silt
 - muck
 - none of the above
31. The measure of the amount of water held and the rate water moves in the soil profile is called
- internal drainage
 - external drainage
 - erosion
 - chromo
 - both a and b are correct
32. _____ is the very slow rate of erosion which occurs under natural conditions that removes weathered material from the soil surface
- accelerated erosion
 - rill erosion
 - gully erosion
 - moderate erosion
 - none of the above

33. Land that occurs downslope from some adjacent land, receives sediment from these adjacent lands, has 8 to 20 inches of lighter colored material deposited over an existing A horizon is

- a. E horizon
- b. moderately eroded
- c. overwash
- d. gullied land
- e. none of the above

34. Regarding the potential of land for growing rowcrops, medium soils

- a. can be used for rowcrops at least half the time but not continuously even with adequate management practices
- b. can be used for growing rowcrops at least half the time with the use of adequate management practices
- c. are not suited for rowcrops
- d. can be used for continuous rowcrops
- e. none of the above

35. If a land capability map shows an area colored orange, this land

- a. can be used occasionally for rowcrops but is better suited for hay and pasture
- b. needs some special management even when used for hay and pasture
- c. is suitable for nearly any use with no hazards or limitations
- d. needs contouring and conservation tillage
- e. is suitable for rowcrops

36. Calcareous soils raise the pH above neutral and limit the availability of

- f. nitrogen
- g. calcium
- h. phosphorous
- i. potassium
- j. all the above

37. Tillage and crop rows oriented across the slopes is called
- strip cropping
 - contouring
 - terracing
 - filter strip
 - none of the above
38. Calcareous soil conditions cause
- acidity of the soil
 - iron deficiency in soybeans
 - increased availability of phosphorous and iron
 - decreased availability of phosphorous and iron
 - increased availability of nitrogen
39. What is the percent slope on land where the elevation falls 8 feet in 48 feet of horizontal distance?
- 6%
 - 16.6%
 - 9%
 - 12%
 - none of the above
40. A conventional septic tank absorption field has laterals placed at a depth of _____ inches below the ground surface.
- 12-24
 - 24-30
 - 30-34
 - 34-40

2008 State FFA Soil Judging Key

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