

# 2001 Iowa FFA Soil Career Development Event

Mark the best answer on the scorecard.

1. Residue management is:
  - A.) never used in Iowa.
  - B.) intentionally leaving the past year's crop residue on the soil surface to save soil.
  - C.) the practice of using a plow to bury all residue.
  - D.) a method that increases soil erosion.
  
2. Leaving soil undisturbed from harvest to planting except for nutrient injection is:
  - A.) Mulch Till
  - B.) Ridge Till
  - C.) Conservation Tillage
  - D.) No Till
  
3. Field borders must be at least \_\_\_\_\_ feet wide to ensure room to turn equipment.
  - A.) 16
  - B.) 6
  - C.) 46
  - D.) 26
  
4. Which of the following are used to properly maintain a grassed waterway?
  - A.) Lift implements out of the ground as you cross the waterway.
  - B.) Fertilize periodically.
  - C.) Maintain the width of the grass area when tiling and planting surrounding fields.
  - D.) All of the above.
  - E.) None of the above.
  
5. One year of corn followed by one year of oats and one year of meadow reduces soil losses by \_\_\_\_\_.
  - A.) 60%
  - B.) 10%
  - C.) 100%
  - D.) 5%
  
6. A gradient terrace:
  - A.) collects water and stores it until it can infiltrate into the ground or be released through a stable outlet.
  - B.) must never be installed in Iowa.
  - C.) is designed as a channel to slow runoff water and carry it to a stable outlet like a grassed waterway.
  - D.) must have a windbreak planted on it.
  
7. Primary windbreaks should be planted on the:
  - A.) East and West sides of the property.
  - B.) North and West sides of the property.
  - C.) South and West sides of the property.
  - D.) East and South sides of the property.

8. The conservation practice that grows crops in approximately even width bands on the contour to reduce soil erosion is:
- A.) grassed waterways.
  - B.) water and sediment control basins.
  - C.) cross slope farming.
  - D.) contour stripcropping.
9. Successive floods over a period of years may deposit several feet of \_\_\_\_\_ material in bottomlands.
- A.) colluvial
  - B.) alluvial
  - C.) eolian
  - D.) residuum
10. Intermittent drainageways are:
- A.) the oldest soils in the immediate vicinity.
  - B.) remnants of former bottomlands.
  - C.) droughty because they have gravel layers at shallow depths.
  - D.) where water flows through uplands and terraces after rain.
11. Percent slope can be measured directly with a hand level or a \_\_\_\_\_ designed for that purpose.
- A.) clinometer
  - B.) barometer
  - C.) scale
  - D.) CAM-line
12. Horizons form roughly parallel to the land surface under the influence of:
- A.) weathering
  - B.) leaching
  - C.) plant and microbial activity
  - D.) All of the above
  - E.) None of the above
13. The soil that has the darkest color of any horizon is:
- A.) A
  - B.) B
  - C.) C
  - D.) R
14. Strongly developed E horizons are commonly underlaid by:
- A.) sand.
  - B.) A horizon with much higher content of plant roots.
  - C.) B horizon with much high clay content.
  - D.) Light colored C horizon.
15. Dark colored soil is a Munsell color number \_\_\_\_\_.
- A.) 2
  - B.) 3
  - C.) 4
  - D.) 5

16. Moderately thick soil includes those soils \_\_\_\_\_ inches thick.
- A.) between 3 to 7
  - B.) More than 12
  - C.) between 7 to 12
  - D.) None of the above
17. Clay is:
- A.) smooth like flour.
  - B.) similar to table salt crystals.
  - C.) feels gritty.
  - D.) hard when dry.
18. Mottles contain various compounds of:
- A.) Boron
  - B.) Iron
  - C.) Mercury
  - D.) Iodine
19. Loess is:
- A.) ground up materials left by glaciers.
  - B.) material moved down a steep slope with gravity.
  - C.) silt-sized rock material transported and deposited by wind.
  - D.) sediments deposited by running water.
20. The native vegetation of a soil that was formed under grass vegetation and has a thick, dark A1 horizon is:
- A.) Forest
  - B.) Transition
  - C.) Marsh
  - D.) None of the Above
21. When soil drainage is inadequate:
- A.) the soil may not support loads placed on them.
  - B.) a building may settle.
  - C.) vehicles may get stuck in the mud.
  - D.) All of the above.
  - E.) None of the above.
22. The soil colors and organic matter contents show the affects of:
- A.) internal drainage.
  - B.) surface drainage.
  - C.) erosion class.
  - D.) native vegetation.
23. Accelerated erosion is detrimental because:
- A.) it removes soil and plant nutrients slower than soil formation replenishes them.
  - B.) it removes soil and plant nutrients faster than soil formation replenishes them.
  - C.) the water ponds in certain areas.
  - D.) None of the above

24. Calcareous soil exists where calcareous parent material is exposed at the surface and:
- A.) where soils are severely gullied.
  - B.) where soils are excessively drained.
  - C.) where caused by wetness.
  - D.) only on loess soils.
25. Class I land is colored green on land capability maps. Class II land is colored yellow on land capability maps. Class III land is colored \_\_\_\_\_.
- A.) blue
  - B.) dark green
  - C.) orange
  - D.) red
26. Class V land is:
- A.) nearly level, but limited by rock outcrops or meandering streams.
  - B.) so shallow that even small soil loss is serious.
  - C.) restricted to grazing, woodland, or wildlife.
  - D.) land with a 14 to 18 percent slope.
27. Land with a CSR of 100 in an area with the most favorable weather conditions in Iowa would most likely be in:
- A.) Northwest Iowa.
  - B.) Eastern Iowa
  - C.) South Central Iowa
  - D.) Western Iowa
28. If the soil is in a 5 year rotation of growing corn and soybeans 3 of the 5 years, what would the soil's Productivity Potential for Row Crops be?
- A.) High
  - B.) Medium
  - C.) Low
  - D.) Unsited
29. Class VI, VII, and VIII land needs which of the following practices:
- A.) contouring
  - B.) strip cropping
  - C.) terracing
  - D.) None of the above
  - E.) All of the above
30. Conventional septic tank absorption fields have the laterals placed at:
- A.) a depth of 12 to 15 inches
  - B.) a depth of 24 to 30 inches
  - C.) a depth of 36 to 45 inches
  - D.) None of the above

31. If you needed a good source of topsoil, you would want soil:
- A) more than 40 inches of profile depth, medium textural group, dark A horizon greater than 14 inches thick, and somewhat poorly or better drained.
  - B) more than 40 inches of profile depth, fine textural group, dark A horizon greater than 14 inches thick, and somewhat poorly or better drained.
  - C) more than 40 inches of profile depth, medium textural group, light A horizon greater than 14 inches thick, and somewhat poorly or better drained.
  - D) more than 40 inches of profile depth, medium textural group, dark A horizon greater than 14 inches thick, and poorly or better drained.
32. The stability of basement walls, the foundation, patio, sidewalks, and concrete floors anchored to the ground will be affected by a shrink-swell change of more than \_\_\_\_\_ percent.
- A) 7
  - B) 9
  - C) 5
  - D) 3
33. Soil that may have clayey textures that make it difficult to work or difficult to drain and may have a 0 to 1 percent slope describes what land capability class?
- A) Class I
  - B) Class II
  - C) Class III
  - D) Class V
34. Which Land Capability Class has the most restrictions for use as cropland?
- A) Class IV
  - B) Class V
  - C) Class VII
  - D) Class VIII
35. If two limitations restrict the same soil, the subclass coming first in the official list is assigned to that soil. What is the order of the official subclass list?
- A) w, s, e, c
  - B) c, s, w, e
  - C) s, c, w, e
  - D) e, w, s, c
36. An average loam contains:
- A) 50% Sand, 40% Silt, 10% Clay
  - B) 40% Sand, 40% Silt, 40% Clay
  - C) 40% Sand, 40% Silt, 20% Clay
  - D) 35% Sand, 35% Silt, 40% Clay
37. Which component of soil is strongly expressed compared to the amount present when determining soil texture?
- A) Sand
  - B) Silt
  - C) Clay
  - D) Organic Matter

38. If a soil feels gritty, has many visible sand grains, has little cohesion, produces a ribbon less than  $\frac{1}{2}$  inch long, and exhibits little evidence of plasticity, what texture group does it belong to?
- A.) Coarse
  - B.) Moderately Coarse
  - C.) Medium
  - D.) Moderately Fine
  - E.) Fine
39. A shallow root system can produce fertility problems because:
- A.) the plants have too little soil from which to obtain nutrients.
  - B.) the parent material was most likely forest.
  - C.) the spring wetness causes the plants to be stunted and die.
  - D.) the roots cannot hold the plant upright.
40. Internal drainage is BEST described as:
- A.) the measure of the amount of sand in the profile.
  - B.) the measure of the amount of pore space in the profile.
  - C.) the level of watertable.
  - D.) the measure of the amount of water held and the rate the water moves in the soil profile.