2018 Iowa FFA Soil Judging CDE Exam

1. Landscape positions characterizes the location of the soil on the landscape and identifies potential risks. Which landscape position is considered the floodplain of the stream and collects overflow water:
   a. Bottomland
   b. Intermittent drainageway
   c. Footslope
   d. Terrace
   e. Upload

2. Slope can be influenced by a variety of characteristics and affect the soil in a number of ways. According to your soil judging manual, which of the following would be considered nearly level soil:
   a. 0 to 2 percent
   b. 2 to 5 percent
   c. 5 to 9 percent
   d. 9 to 14 percent
   e. Greater than 14 percent

3. Which of the following is **NOT** a characteristic of the A Horizon:
   a. Has the most biological activity
   b. Contains the most plant roots
   c. Accumulates the most organic matter
   d. Has the lightest color
   e. All of the above are characteristics

4. Which of the following leads to a dark color of the A horizon:
   a. A lack of vegetative growth to use up the nutrients
   b. Slow decay of plant material and animal material
   c. Lack of moisture in the soil
   d. Lack of fertility
   e. High percentage of sand particles

5. Which influence soil color:
   a. Moisture status
   b. Clay/clay coatings
   c. Drainage class
   d. Degree of weathering
   e. All of the above

6. A topsoil thickness for 10 inches of A horizon before a B would be classified as:
   a. Very thick
   b. Thick
   c. Moderately thick
   d. Moderately thin
   e. Thin

7. Equal percentages of sand, silt, and clay would result in what textural group?
   a. Fine
   b. Moderately fine
   c. Medium
   d. Moderately coarse
   e. Coarse

8. High clay content can be determined by:
   a. Long ribbon and sticky feel
   b. Sticky and flour-like feel
   c. Long ribbon plus grit
   d. Putty-like consistency and soft feel
   e. Sticky plus loose consistency

9. Which of the following is **NOT** a step or a portion of a step in the procedure for determining the textural class of the soil:
   a. Look at the soil to see whether it appears to be sandy, silty, or aggregated into groups of masses of particles.
   b. Examine the color to determine the nutrient content of the soil.
   c. Moisten a sample of the soil to make it as plastic (formable like putty or modeling clay) as possible.
   d. Squeeze the moist soil between your thumb and forefinger, and try to flatten it into a thin ribbon.
   e. All of the above

10. Olive gray or bluish gray colors of the B Horizon indicate:
   a. Well aerated conditions
   b. Poor natural drainage
   c. Efficient drainage
   d. High organic content
   e. Poor fertilization practices

11. Texture of the B horizon influences which of the following properties:
   a. Resistance to root penetration
   b. Support for buildings
   c. Soil structure
   d. Permeability to air and water
   e. All of the above

12. A soil with a profile depth of 37 inches would be classified as:
   a. Very deep
   b. Deep
   c. Moderately deep
   d. Shallow
   e. Very shallow

13. Colluvium is a parent material that is:
    a. Well-sorted by water
    b. High in rocks
    c. Primarily organic material
    d. Moved by gravity
    e. Associated with glaciers

14. In regard to soil parent material, loess is:
    a. Ground up material left by glaciers
    b. Materials moved down steep slopes by gravity
    c. Sediments deposited by running water
    d. Organic materials that accumulated in bogs
    e. Silt-sized material transported and deposited by wind

15. Which native vegetation shows the influence of both grass and trees and have dark A horizons?
    a. Marsh
    b. Prairie
    c. Wetland
    d. Forest
    e. Transition

16. An area of land is categorized being nearly level and has a mixture of smooth and rough surfaces. The surface drainage class is most likely:
    a. Slow
    b. Medium
    c. Ponded
    d. Rapid
    e. None of the above

17. Which is true regarding surface drainage:
    a. Surface drainage is based primarily upon soil surface texture
    b. Soil redox features are the primary way to determine surface drainage.
    c. Surface drainage is expected to be the same across a hillslope or field
    d. Surface drainage is based primarily on slope and landscape properties

18. An area of land had a few weeks of being waterlogged during the wet season and may require tile to reach full agronomic potential. The internal drainage class is most likely:
    a. Excessively drained
    b. Well drained
    c. Somewhat poorly drained
    d. Poorly drained
    e. Very poorly drained

19. A very slow rate of erosion under natural conditions is called:
    a. Authentic erosion
    b. Geologic erosion
    c. Accelerated erosion
    d. Rill erosion
    e. None of the above

20. Land in this erosion class has the nearest use potential and field management needs as it did originally when the settlers first started cultivating it.
    a. Overwash
    b. Moderately eroded
    c. Severely eroded
    d. Gullied land
    e. Slightly eroded

21. In some areas, water evaporating from wet soils leaves behind enough ___ to cause calcareous conditions.
    a. Calcium carbonate
    b. Calcium phosphate
    c. Sodium chloride
    d. Hydrochloric acid residue
    e. None of the above

22. Calcareous soils can be identified in what two ways:
    a. Soil pH and color
    b. Acid test and texture
    c. Color and acid test
    d. Texture and color
    e. None of the above

23. Rocks are defined as fragments greater than ___ in size.
    a. 1.0 mm
    b. 2.0 mm
    c. 1.0 cm
    d. 2.0 cm
    e. None of the above

24. A limitation due to stones or rock fragments may be significant when the soil contains over ___ percent by volume.
    a. 2
    b. 10
    c. 15
    d. 20
    e. None of the above

25. Land that can be used occasionally for cropland under careful management, is better suited for hay or pasture generally, has a slope between 14 and 18 percent, and may have been severely eroded by previous misuse:
    a. Class I
    b. Class II
    c. Class III
    d. Class IV
    e. Class V

26. Calcareous conditions _____ and limit the availability of phosphorus and iron:
    a. Lower the soil pH below neutral
    b. Raise the soil pH above neutral
    c. Makes the soil pH neutral
    d. Doesn't affect the soil pH
    e. None of the above are true

27. Land capability subclasses are used to denote the type of hazard or limitation restricting the use of soils grouped in land classes:
    a. I-VIII since all soil is important to preserve
    b. II-VIII since Class I has no significant hazards or limitations
    c. V-VIII since these soils are at the greatest risk
    d. I-VII because 8 is not suited for agriculture
    e. II-V since these are likely in agricultural management

28. A soil with the following hazards and limitations would be considered in what subclass: severe erosion and moderately unfavorable acidity:
    a. e
    b. w
    c. s
    d. e and s
    e. e and c

29. Which set of management techniques would you recommend on the hillslope to decrease sediment movement and erosion across a landscape:
    a. Surface drainage, grass waterways, and terraces
    b. Subsurface drainage, contouring, and conservation tillage
    c. Grass waterways, terraces, and conservation tillage
    d. Surface drainage, contouring, and terraces
    e. Subsurface drainage, strip cropping, and conservation tillage

30. Which of the following factors influence a soil's Corn Suitability Rating?
    a. Soil properties
    b. Topography
    c. Weather/climatic conditions
    d. All of the above
    e. None of the above

31. In the soil judging contest, the soil will be rated for its productivity potential regarding how intensively the land can be row cropped with adequate management. Soil that can be used for growing row crops at least half of the time but **NOT** continuously with use of adequate management practices is classified as which of the four classes:
    a. High
    b. Medium
    c. Low
    d. Unsuited
    e. None of the above

32. This management practice involves using tillage and crop rows to reduce the velocity of runoff by orienting them across slopes:
    a. Terracing
    b. Conservation tillage
    c. Strip Cropping
    d. Surface drainage
    e. Contouring

33. A system of alternating strips of each crop in the rotation placed either across the slope or across the prevailing wind:
    a. Strip cropping
    b. Contouring
    c. Terracing
    d. Tiling
    e. Conservation tillage

34. Soils whose volume changes by more than __ percent will affect the stability of basement walls, the foundation, patio, sidewalks, and concrete floors anchored to the ground.
    a. 1
    b. 9
    c. 27
    d. 59
    e. 87

35. In evaluating sites for conventional septic tank absorption fields, bedrock is a limitation when bedrock is found:
    a. Only within the first 36 inches of a soil profile
    b. Bedrock is never a problem
    c. Only within the first 60 inches of a soil profile
    d. Bedrock is always a problem
    e. Only within the first 72 inches of a soil profile

36. Shrink-swell of the soil relates to:
    a. The external drainage of the soil
    b. The expansion of the soil when it dries
    c. The percent of volume change during wetting and drying
    d. The contraction of soil when it dries
    e. Both B and C

37. A(n) _____ is an area in which effluent from the septic tank is distributed into the soil through tiles or perforated pipes that are installed below the ground surface.
    a. Absorption pit
    b. Water table
    c. Absorption field
    d. Septic pit
    e. None of the above

38. Soils with fine textures and dense structures have slow rates of water movement that result in _____, resulting in a limitation for conventional septic tank absorption fields.
    a. Surface ponding and a high water table
    b. High water table and a root limiting layer
    c. Inadequate topsoil and surface ponding
    d. Shrink-swell and ponding
    e. Root limiting layer and shrink-swell

39. _____ increases absorption and retention of moisture and nutrients for plant growth, enhances structural development and stability of soil aggregates, and generally improves soil quality.
    a. Bedrock
    b. Organic matter
    c. Soil moisture
    d. Vegetation
    e. None of the above

40. Presence of _____ at 12 inches or immediately below the dark surface layer will be used to determine evidence of a water table in topsoil.
    a. Roots
    b. Overwash
    c. Redox features
    d. Flooding evidence
    e. None of the above

Answer Key:

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

Iowa Soil Judging Score Card

See Soil Judging in Iowa, PM 1106, for interpretation of this form. Mark only one box per question.

Soil Site No. 1 Contestant Name Key

Contestant No. _____ School Name _____

Part I. Surface Features (2 points)

1. Landscape Position	Upland	a	X
	Intermittent drainageways	b	
	Footslope	c	
	Terrace	d	
	Bottomland	e	
2. Slope	Nearly level, 0-2%	a	X
	Gently sloping, 2-5% 1%	b	
	Moderately sloping, 5-9%	c	
	Strongly sloping, 9-14%	d	
	Steep, greater than 14%	e	
		Part I Total	

Part II. Soil Features—The Profile (17 points)

3. Moist Color of A1 or Ap	Dark	a	X
	Moderately dark	b	
	Light	c	
	Very light	d	
4. E Horizon Present	Yes	a	
	No	b	X
5. Thickness of A Horizon or A+E Horizons	Thick, more than 12"	a	
	Moderately thick, 7-12"	b	X
	Moderately thin, 3-7"	c	
	Thin, less than 3"	d	
6. Texture of A Horizon	Coarse	a	
	Moderately coarse	b	
	Medium	c	
	Moderately fine	d	X
	Fine	e	
7. B Horizon Present	Yes	a	X
	No	b	
8. Moist Color of B Horizon (or C Horizon if B is absent)	Uniform brown or dark brown or strong brown	a	X
	Uniform brown or dark brown or strong brown. Includes olive or yellowish or reddish cast or tints or other redox features	b	
	Grayish brown or olive gray, no redox features	c	
	Grayish brown or olive gray with gray or rust redox features	d	
	None of the above	e	
9. Moist color of B Horizon (or C Horizon if B is absent)	Gray with redox features	a	
	Uniform gray. May have bluish or greenish cast or rust redox features around roots or small pores	b	
	Black. May contain few rust redox	c	
	None of the above	d	X

Part II. (continued)

10. Texture of B Horizon (or C Horizon if B is absent or buried A if 24" overwash)	Coarse	a	
	Moderately coarse	b	
	Medium	c	
	Moderately fine	d	X
	Fine	e	
11. Soil Depth	Deep, more than 40"	a	X
	Moderately deep, 30-40"	b	
	Moderately shallow, 20-30"	c	
	Shallow, less than 20"	d	
12. Soil Parent Material	Glacial drift or local sediments from glacial drift	a	X
	Loess	b	
	Alluvium or colluvium	c	
	Residuum	d	
	Peat or organic	e	
13. Native Vegetation	Forest	a	
	Transition	b	
	Prairie	c	X
	Marsh	d	
14. Surface Drainage	Rapid	a	
	Medium	b	
	Slow	c	X
	Ponded	d	
15. Internal Drainage	Excessively drained	a	
	Well drained	b	X
	Somewhat poorly drained	c	
	Poorly drained	d	
	Very poorly drained	e	
16. Erosion Class	Overwash	a	
	Uneroded or slightly eroded	b	
	Moderately eroded	c	X
	Severely eroded original 15"	d	
	Gullied land	e	
17. Calcareous Surface Soil	Yes	a	
	No	b	X
18. Calcareous B Horizon (or C Horizon if B is absent)	Yes	a	X
	No	b	X Both
19. Stoniness or Rockiness	Yes	a	
	No	b	X
		Part II Total	

Part III. Land Capability Classification and Productivity Potential (4 points)

20. Land Capability Class	I. Few limitations	a	X
	II. Some limitations	b	
	III. Severe limitations	c	
	IV. Very severe limitations	d	
	None of the above	e	
21. Land Capability Class	V. Noncropland	a	
	VI. Unsuited for cultivation	b	
	VII. Restricted for agric.	c	
	VIII. Nonagricultural	d	
	None of the above	e	X
22. Land Capability Subclass	None	a	X
	e erosion	b	
	w wetness	c	
	s soil	d	
	c climate	e	
23. Productivity Potential	High	a	X
	Medium	b	
	Low	c	
	Unsuited	d	
		Part III Total	

Part IV. Evaluation of Management Practices (7 points)

Practices to overcome soil limitations

24. Surface drainage	Yes	a	
	No	b	X
25. Subsurface drainage	Yes	a	
	No	b	X
26. Grass waterway	Yes	a	
	No	b	X
27. Contouring	Yes	a	
	No	b	X
28. Strip cropping	Yes	a	
	No	b	X
29. Terracing	Yes	a	
	No	b	X
30. Conservation tillage	Yes	a	X
	No	b	
		Part IV Total	

Part V. Suitability of Soils for Nonagricultural Uses (10 points)

Limitations for building sites for houses with basements

31. Bedrock	Yes	a	
	No	b	X
32. Evidence of water table	Yes	a	X
	No	b	
33. Flooding	Yes	a	
	No	b	X
34. Shrink-swell	Yes	a	X
	No	b	

Limitations for conventional septic tank absorption fields

35. Bedrock	Yes	a	
	No	b	X
36. Flooding	Yes	a	
	No	b	X
37. Evidence of water table	Yes	a	X
	No	b	

Source of topsoil

38. Texture group	Suitable	a	
	Not Suitable	b	X
39. Thickness of A horizon	Suitable	a	
	Not Suitable	b	X
40. Evidence of water table	Suitable	a	X
	Not Suitable	b	
		Part V Total	

Scoring Summary

Part I	
Part II	
Part III	
Part IV	
Part V	
Total Score	

IOWA STATE UNIVERSITY
Extension and Outreach

Prepared by Gerald A. Miller, extension agronomist.
PM 1107 Revised June 2013
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Iowa Soil Judging Score Card

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Soil Site No. 2 Contestant Name Key

Contestant No. _____ School Name _____

Part I. Surface Features (2 points)

1. Landscape Position	Upland	a	X
	Intermittent drainageways	b	
	Footslope	c	
	Terrace	d	
	Bottomland	e	
2. Slope	Nearly level, 0-2%	a	X
	Gently sloping, 2-5%	b	
	Moderately sloping, 5-9%	c	
	Strongly sloping, 9-14%	d	
	Steep, greater than 14%	e	
		Part I Total	

Part II. Soil Features—The Profile (17 points)

3. Moist Color of A1 or Ap	Dark	a	X
	Moderately dark	b	
	Light	c	
	Very light	d	
4. E Horizon Present	Yes	a	
	No	b	X
5. Thickness of A Horizon or A+E Horizons	Thick, more than 12"	a	
	Moderately thick, 7-12"	b	X
	Moderately thin, 3-7"	c	
	Thin, less than 3"	d	
6. Texture of A Horizon	Coarse	a	
	Moderately coarse	b	
	Medium	c	X
	Moderately fine	d	
	Fine	e	
7. B Horizon Present	Yes	a	X
	No	b	
8. Moist Color of B Horizon (or C Horizon if B is absent)	Uniform brown or dark brown or strong brown	a	X
	Uniform brown or dark brown or strong brown. Includes olive or yellowish or reddish cast or tints or other redox features	b	
	Grayish brown or olive gray, no redox features	c	
	Grayish brown or olive gray with gray or rust redox features	d	
	None of the above	e	
9. Moist color of B Horizon (or C Horizon if B is absent)	Gray with redox features	a	
	Uniform gray. May have bluish or greenish cast or rust redox features around roots or small pores	b	
	Black. May contain few rust redox	c	
	None of the above	d	X

Part II. (continued)

10. Texture of B Horizon (or C Horizon if B is absent or buried A if 24" overwash)	Coarse	a	
	Moderately coarse	b	X
	Medium	c	
	Moderately fine SL	d	
	Fine	e	
11. Soil Depth	Deep, more than 40"	a	X
	Moderately deep, 30-40"	b	
	Moderately shallow, 20-30"	c	
	Shallow, less than 20"	d	
12. Soil Parent Material	Glacial drift or local sediments from glacial drift	a	X
	Loess	b	
	Alluvium or colluvium	c	
	Residuum	d	
	Peat or organic	e	
13. Native Vegetation	Forest	a	
	Transition	b	
	Prairie	c	X
	Marsh	d	
14. Surface Drainage	Rapid	a	
	Medium	b	
	Slow	c	X
	Ponded	d	
15. Internal Drainage	Excessively drained	a	
	Well drained	b	X
	Somewhat poorly drained	c	
	Poorly drained	d	
	Very poorly drained	e	
16. Erosion Class	Overwash	a	
	Uneroded or slightly eroded	b	
	Moderately eroded	c	X
	Severely eroded	d	
	Gullied land	e	
17. Calcareous Surface Soil	Yes	a	
	No	b	X
18. Calcareous B Horizon (or C Horizon if B is absent)	Yes	a	
	No	b	X
19. Stoniness or Rockiness	Yes	a	
	No	b	X
		Part II Total	

C starts at 29" Depletions at ~25"

Part III. Land Capability Classification and Productivity Potential (4 points)

20. Land Capability Class	I. Few limitations	a	X
	II. Some limitations	b	
	III. Severe limitations	c	
	IV. Very severe limitations	d	
	None of the above	e	
21. Land Capability Class	V. Noncropland	a	
	VI. Unsuited for cultivation	b	
	VII. Restricted for agric.	c	
	VIII. Nonagricultural	d	
	None of the above	e	X
22. Land Capability Subclass	None	a	X
	e erosion	b	
	w wetness	c	
	s soil	d	
	c climate	e	
23. Productivity Potential	High	a	X
	Medium	b	
	Low	c	
	Unsuited	d	
			Part III Total

Part IV. Evaluation of Management Practices (7 points)

Practices to overcome soil limitations

24. Surface drainage	Yes	a	
	No	b	X
25. Subsurface drainage	Yes	a	
	No	b	X
26. Grass waterway	Yes	a	
	No	b	X
27. Contouring	Yes	a	
	No	b	X
28. Strip cropping	Yes	a	
	No	b	X
29. Terracing	Yes	a	
	No	b	X
30. Conservation tillage	Yes	a	X
	No	b	
			Part IV Total

Part V. Suitability of Soils for Nonagricultural Uses (10 points)

Limitations for building sites for houses with basements

31. Bedrock	Yes	a	
	No	b	X
32. Evidence of water table	Yes	a	X
	No	b	
33. Flooding	Yes	a	
	No	b	X
34. Shrink-swell	Yes	a	
	No	b	X
Limitations for conventional septic tank absorption fields			
35. Bedrock	Yes	a	
	No	b	X
36. Flooding	Yes	a	
	No	b	X
37. Evidence of water table	Yes	a	X
	No	b	
Source of topsoil			
38. Texture group	Suitable	a	
	Not Suitable	b	X
39. Thickness of A horizon	Suitable	a	
	Not Suitable	b	X
40. Evidence of water table	Suitable	a	X
	Not Suitable	b	
			Part V Total

Scoring Summary

Part I	
Part II	
Part III	
Part IV	
Part V	
Total Score	

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Soil Site No. 3 Contestant Name Key

Contestant No. _____ School Name _____

Part I. Surface Features (2 points)

1. Landscape Position	Upland	a	X
	Intermittent drainageways	b	
	Footslope	c	
	Terrace	d	
	Bottomland	e	
2. Slope	Nearly level, 0-2%	a	
	Gently sloping, 2-5% 2.5%	b	X
	Moderately sloping, 5-9%	c	
	Strongly sloping, 9-14%	d	
	Steep, greater than 14%	e	

Part I Total

Part II. Soil Features—The Profile (17 points)

3. Moist Color of A1 or Ap	Dark	a	X
	Moderately dark	b	
	Light	c	
	Very light	d	
4. E Horizon Present	Yes	a	
	No	b	X
5. Thickness of A Horizon or A+E Horizons	Thick, more than 12"	a	X
	Moderately thick, 7-12"	b	
	Moderately thin, 3-7"	c	
	Thin, less than 3"	d	
6. Texture of A Horizon	Coarse	a	
	Moderately coarse	b	
	Medium	c	X
	Moderately fine	d	
	Fine	e	
7. B Horizon Present	Yes	a	X
	No	b	
8. Moist Color of B Horizon (or C Horizon if B is absent)	Uniform brown or dark brown or strong brown	a	X
	Uniform brown or dark brown or strong brown. Includes olive or yellowish or reddish cast or tints or other redox features	b	
	Grayish brown or olive gray, no redox features	c	
	Grayish brown or olive gray with gray or rust redox features	d	
	None of the above	e	
9. Moist color of B Horizon (or C Horizon if B is absent)	Gray with redox features	a	
	Uniform gray. May have bluish or greenish cast or rust redox features around roots or small pores	b	
	Black. May contain few rust redox	c	
	None of the above	d	X

Part II. (continued)

10. Texture of B Horizon (or C Horizon if B is absent or buried A if 24" overwash)	Coarse	a	
	Moderately coarse	b	
	Medium	c	
	Moderately fine	d	X
	Fine	e	
11. Soil Depth	Deep, more than 40"	a	X
	Moderately deep, 30-40"	b	
	Moderately shallow, 20-30"	c	
	Shallow, less than 20"	d	
12. Soil Parent Material	Glacial drift or local sediments from glacial drift	a	X
	Loess	b	
	Alluvium or colluvium	c	
	Residuum	d	
	Peat or organic	e	
13. Native Vegetation	Forest	a	
	Transition	b	
	Prairie	c	X
	Marsh	d	
14. Surface Drainage	Rapid	a	
	Medium	b	X
	Slow	c	
	Ponded	d	
15. Internal Drainage	Excessively drained	a	
	Well drained	b	X
	Somewhat poorly drained	c	
	Poorly drained	d	
	Very poorly drained	e	
16. Erosion Class	Overwash	a	
	Uneroded or slightly eroded	b	
	Moderately eroded	c	X
	Severely eroded	d	
	Gullied land	e	
17. Calcareous Surface Soil	Yes	a	
	No	b	X
18. Calcareous B Horizon (or C Horizon if B is absent)	Yes	a	
	No	b	X
19. Stoniness or Rockiness	Yes	a	
	No	b	X

Part II Total

Part III. Land Capability Classification and Productivity Potential (4 points)

20. Land Capability Class	I. Few limitations	a	
	II. Some limitations	b	X
	III. Severe limitations	c	
	IV. Very severe limitations	d	
	None of the above	e	
21. Land Capability Class	V. Noncropland	a	
	VI. Unsuited for cultivation	b	
	VII. Restricted for agric.	c	
	VIII. Nonagricultural	d	
	None of the above	e	X
22. Land Capability Subclass	None	a	
	e erosion	b	X
	w wetness	c	
	s soil	d	
	c climate	e	
23. Productivity Potential	High	a	X
	Medium	b	
	Low	c	
	Unsuited	d	

Part III Total

Part IV. Evaluation of Management Practices (7 points)

Practices to overcome soil limitations

24. Surface drainage	Yes	a	
	No	b	X
25. Subsurface drainage	Yes	a	
	No	b	X
26. Grass waterway	Yes	a	
	No	b	X
27. Contouring	Yes	a	X
	No	b	
28. Strip cropping	Yes	a	X
	No	b	
29. Terracing	Yes	a	X
	No	b	
30. Conservation tillage	Yes	a	X
	No	b	

Part IV Total

Part V. Suitability of Soils for Nonagricultural Uses (10 points)

Depletions at ~35"

Limitations for building sites for houses with basements

31. Bedrock	Yes	a	
	No	b	X
32. Evidence of water table	Yes	a	X
	No	b	
33. Flooding	Yes	a	
	No	b	X
34. Shrink-swell	Yes	a	X
	No	b	

Limitations for conventional septic tank absorption fields

35. Bedrock	Yes	a	
	No	b	X
36. Flooding	Yes	a	
	No	b	X
37. Evidence of water table	Yes	a	X
	No	b	

Source of topsoil

38. Texture group	Suitable	a	
	Not Suitable	b	X
39. Thickness of A horizon	Suitable	a	X
	Not Suitable	b	
40. Evidence of water table	Suitable	a	X
	Not Suitable	b	

Part V Total

Scoring Summary

Part I	
Part II	
Part III	
Part IV	
Part V	
Total Score	

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Iowa Soil Judging Score Card

See Soil Judging in Iowa, PM 1106, for interpretation of this form. Mark only one box per question.

Soil Site No. 4 Contestant Name Key

Contestant No. _____ School Name _____

Part I. Surface Features (2 points)

1. Landscape Position	Upland	a	
	Intermittent drainageways	b	
	Footslope	c	X
	Terrace	d	
	Bottomland	e	
2. Slope	Nearly level, 0-2%	a	
	Gently sloping, 2-5% 4%	b	X
	Moderately sloping, 5-9%	c	
	Strongly sloping, 9-14%	d	
	Steep, greater than 14%	e	
		Part I Total	

Part II. Soil Features—The Profile (17 points)

3. Moist Color of A1 or Ap	Dark	a	X
	Moderately dark	b	
	Light	c	
	Very light	d	
4. E Horizon Present	Yes	a	
	No	b	X
5. Thickness of A Horizon or A+E Horizons	Thick, more than 12"	a	X
	Moderately thick, 7-12"	b	
	Moderately thin, 3-7"	c	
	Thin, less than 3"	d	
6. Texture of A Horizon	Coarse	a	
	Moderately coarse	b	
	Medium	c	X
	Moderately fine	d	
	Fine	e	
7. B Horizon Present	Yes	a	X
	No	b	
8. Moist Color of B Horizon (or C Horizon if B is absent)	Uniform brown or dark brown or strong brown	a	
	Uniform brown or dark brown or strong brown. Includes olive or yellowish or reddish cast or tints or other redox features	b	X
	Grayish brown or olive gray, no redox features	c	
	Grayish brown or olive gray with gray or rust redox features	d	
	None of the above	e	
9. Moist color of B Horizon (or C Horizon if B is absent)	Gray with redox features	a	
	Uniform gray. May have bluish or greenish cast or rust redox features around roots or small pores	b	
	Black. May contain few rust redox	c	
	None of the above	d	X

Part II. (continued)

10. Texture of B Horizon (or C Horizon if B is absent or buried A if 24" overwash)	Coarse	a	
	Moderately coarse	b	
	Medium	c	
	Moderately fine	d	X
	Fine	e	
11. Soil Depth	Deep, more than 40"	a	X
	Moderately deep, 30-40"	b	
	Moderately shallow, 20-30"	c	
	Shallow, less than 20"	d	
12. Soil Parent Material	Glacial drift or local sediments from glacial drift	a	X
	Loess	b	
	Alluvium or colluvium	c	
	Residuum	d	
	Peat or organic	e	
13. Native Vegetation	Forest	a	
	Transition	b	
	Prairie	c	X
	Marsh	d	
14. Surface Drainage	Rapid	a	
	Medium	b	X
	Slow	c	
	Ponded	d	
15. Internal Drainage	Excessively drained	a	
	Well drained	b	
	Somewhat poorly drained	c	X
	Poorly drained	d	
	Very poorly drained	e	
16. Erosion Class	Overwash	a	
	Uneroded or slightly eroded	b	X
	Moderately eroded	c	
	Severely eroded	d	
	Gullied land	e	
17. Calcareous Surface Soil	Yes	a	
	No	b	X
18. Calcareous B Horizon (or C Horizon if B is absent)	Yes	a	
	No	b	X
19. Stoniness or Rockiness	Yes	a	
	No	b	X
		Part II Total	

Part III. Land Capability Classification and Productivity Potential (4 points)

20. Land Capability Class	I. Few limitations	a	
	II. Some limitations	b	X
	III. Severe limitations	c	
	IV. Very severe limitations	d	
	None of the above	e	
21. Land Capability Class	V. Noncropland	a	
	VI. Unsuited for cultivation	b	
	VII. Restricted for agric.	c	
	VIII. Nonagricultural	d	
	None of the above	e	X
22. Land Capability Subclass	None	a	
	e erosion	b	X
	w wetness	c	
	s soil	d	
	c climate	e	
23. Productivity Potential	High	a	X
	Medium	b	
	Low	c	
	Unsuited	d	

Part III Total

Part IV. Evaluation of Management Practices (7 points)

Practices to overcome soil limitations

24. Surface drainage	Yes	a	
	No	b	X
25. Subsurface drainage	Yes	a	
	No	b	X
26. Grass waterway	Yes	a	
	No	b	X
27. Contouring	Yes	a	X
	No	b	
28. Strip cropping	Yes	a	X
	No	b	
29. Terracing	Yes	a	X
	No	b	
30. Conservation tillage	Yes	a	X
	No	b	

Part IV Total

Part V. Suitability of Soils for Nonagricultural Uses (10 points)

Limitations for building sites for houses with basements

31. Bedrock	Yes	a	
	No	b	X
32. Evidence of water table	Yes	a	X
	No	b	
33. Flooding	Yes	a	
	No	b	X
34. Shrink-swell	Yes	a	X
	No	b	

Limitations for conventional septic tank absorption fields

35. Bedrock	Yes	a	
	No	b	X
36. Flooding	Yes	a	
	No	b	X
37. Evidence of water table	Yes	a	X
	No	b	

Source of topsoil

38. Texture group	Suitable	a	
	Not Suitable	b	X
39. Thickness of A horizon	Suitable	a	X
	Not Suitable	b	
40. Evidence of water table	Suitable	a	X
	Not Suitable	b	

Part V Total

Scoring Summary

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