

2019 Iowa FFA Soil Judging CDE Exam

1. If a soil is eroded so traffic across the area becomes challenging, this should be considered:
 - a. Slightly eroded
 - b. Moderately eroded
 - c. Severely eroded
 - d. Gullied land
 - e. Stony or rocky
2. The largest amount of organic matter is most likely to accumulate in the:
 - a. A horizon
 - b. B horizon
 - c. C horizon
 - d. R Horizon
 - e. E horizon
3. A conventional septic tank absorption field has the laterals placed at a depth of:
 - a. 5-6 feet
 - b. 3-4 feet
 - c. 24-30 inches
 - d. No less than 12 inches
 - e. 6 inches
4. In the land capability classification, a land that can be adapted for nearly any use by taking some precautions to meet its need is:
 - a. Class I
 - b. Class II
 - c. Class III
 - d. Class IV
 - e. None of the above
5. Conservation tillage:
 - a. Is most effective when used with other conservation practices including contouring, grassed waterways, field borders, etc
 - b. Is not sufficient on cropland where excess sheet and rill erosion are a problem
 - c. Is any tillage and planting system that leaves any amount of the soil surface covered by crop residue
 - d. Is the standard or common tillage practice
 - e. All of the above are true.
6. Which of the following characteristics is an inherent surface feature?
 - a. runoff
 - b. erosion
 - c. slope
 - d. land use

7. The water holding capacity of a soil is affected by soil texture. As the size of the soil particles decreases the total water-holding capacity:
- decreases
 - increases
 - is not affected
 - remains the same
8. A three percent slope is described as:
- Nearly level
 - Gently sloping
 - Moderately sloping
 - Strongly sloping
9. A few drops of dilute hydrochloric acid will:
- Cause a calcareous soil to effervesce
 - Emit bubbles of oxygen
 - Both A & B
 - None of the above
10. Colors caused by poor internal drainage class (redox features):
- Can easily change if drained
 - Can easily be seen in the A horizon
 - Are defined by munsel chromas 3 or higher
 - Will be visible even in a drought year
11. An appropriate area for a grassed waterway would be:
- An upland of over 5% slope
 - An intermittent drainageway
 - A bottomland that floods frequently
 - A terrace area
12. Which of the following is true regarding soil native vegetation:
- Native vegetation impacts are visible for a short time after the land is cultivated
 - Peat forms under forest vegetation
 - Prairie forms thick and dark A horizons
 - Prairie vegetation is expected to develop an E horizon across the landscape
13. Land may be placed in Class IIw because
- Wide terraces are needed
 - Additional conservation practices are required
 - Row crop yields will be limited
 - Tile drainage is needed

14. A parent material that accumulates at the bottom of a slope would likely be:

- a. Alluvium
- b. Glacial till
- c. Colluvium
- d. Residuum

15. In regards to “texture”, silt particles are:

- a. 0.05 to 2.0 mm in diameter
- b. 0.05 to 0.2 mm in diameter
- c. 0.002 to 0.05 mm in diameter
- d. Less than 0.002 mm in diameter

16. The accumulation of clay in the subsoil is due to

- a. Glacial deposits
- b. Decomposition of minerals and organic matter
- c. The material from which soil is developed
- d. The effect of water moving clay from the upper profile

17. Excessively drained soils

- a. Are the same as well-drained soils for plant growth
- b. Will contain water only a day or two after a rain
- c. Have coarse textures
- d. Have problems with poor aeration

18. 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

19. 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

20. Alternating an erosion reducing crop with a row crop across the slope would be considered:

- a. Strip cropping
- b. Double cropping
- c. A filter crop
- d. A cover crop

21. Calcareous soil conditions cause
- Acidity of soil
 - Decreased iron availability
 - Decreased nitrogen availability
 - Increased phosphorus availability
22. In judging soil, the soil will be rated for its productivity potential in terms of how intensively the land can be
- Row cropped
 - Profiled
 - Tract
 - Strip-cropping
23. The field test method of determining soil texture is called
- Ribbon test
 - Soil testing
 - Hazard test
 - Kneading test
24. To be considered a significant limitation, rock fragments would make up more than _____ percent of the surface layer by volume.
- 5
 - 15
 - 25
 - 30
 - 50
25. Calculate the slope of a hill when in 80 feet of run the elevation drops 10 feet
- 6%
 - 8%
 - 9.5%
 - 10%
 - 12.5%
26. _____ can be subject to erosion, but don't receive stream deposits because they are too high in the landscape to be flooded.
- Sloped areas
 - Terraces
 - Drainageways
 - Uplands
27. Adequate treatment of effluent is difficult if the soil:
- Is shallow to bedrock
 - Is slowly permeable
 - Is subject to periodic flooding
 - All of the above

28. The depth of the soil for this judging contest is defined as:
- The thickness of the top soil
 - The top 9 to 12 inches of soil
 - The thickness of soil above a layer that stops plant root development
 - The depth down to the C horizon
29. An Ap would likely be
- A tilled layer
 - Layer of mostly organic material
 - Right above a C or R horizon
 - Hard bedrock
 - The first of several parts
30. Land Capability Class IV land:
- Is better suited for a perennial crop
 - Could result from severe past erosion
 - Could be 14-18% slope
 - All of the above
31. _____ 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
32. Planting crop rows across the slope (rather than up and down):
- Is recommended for 2-14% slopes
 - Will be sufficient to control erosion on a 4% slope
 - May reduce erosion by up to 50%
 - None of the above
33. The texture of soil has a strong influence on soil productivity and management requirements. A soil may be fertile but is hard to work because it is sticky and have a plastic feel when wet and hard when dry, and may have low permeability to air and water and high resistance to root penetration. This soil likely has a _____ texture.
- Loam
 - Sand
 - Silt
 - Clay

34. While judging soil, you discover a soil with silty materials without stratification. The parent material of this soil would be:
- Glacial materials
 - Alluvium
 - Colluvium
 - Loess
35. Which class of surface drainage fits the following condition? Water has an avenue of escape but, because of nearly level, but rough surface vegetation, water stands on the surface for several hours following a rain.
- Rapid
 - Medium
 - Slow
 - Ponded
36. Land capability subclasses are used to denote the type of hazard or limitation restricting the use of soils grouped in land classes:
- Classes 1-4 since these are row cropped
 - Classes 1-8 since all soil is important to preserve
 - Classes 5-8 since these soils are at the greatest risk
 - Classes 1-7 only because class 8 is not suited for agriculture
 - Classes 2-8 are the only ones
37. In Iowa, most soils are deep enough to productively raise crops. What is the minimal depth of soil needed for most plants to grow efficiently?
- 50
 - 40
 - 30
 - 20
 - 10
38. Soil judging consists of
- Evaluating certain properties of a soil and interpreting these evaluations into recommendations for land use
 - Evaluating differences in soils to determine limitations and best conservation practices
 - Estimating soil features, land capabilities and productivity to identify the limitations of a site
 - Classifying soils based on its properties and making recommendations for production and building sites

39. Terracing is the practice of constructing ridges and channels across the slope to intercept runoff water. The type and kind of terrace that is constructed on land depends on which of the following:
- Slope of the land
 - Erosion class of the land
 - Internal drainage
 - All of the above
 - None of the above
40. Which influence soil color:
- Moisture status
 - Clay/clay coatings
 - Drainage class
 - Degree of weathering
 - All of above

Answer Key:

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

Iowa Soil Judging Score Card

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

Part I

Soil Site No. _____ Contestant Name _____

Contestant No. _____ School Name _____

Part I. Surface Features (2 points)

1. Landscape Position	Upland	a <input checked="" type="checkbox"/>
	Intermittent drainageways	b <input type="checkbox"/>
	Footslope	c <input type="checkbox"/>
	Terrace	d <input type="checkbox"/>
	Bottomland	e <input type="checkbox"/>

2. Slope	Nearly level, 0-2%	a <input checked="" type="checkbox"/>
	Gently sloping, 2-5%	b <input checked="" type="checkbox"/>
	Moderately sloping, 5-9%	c <input checked="" type="checkbox"/>
	Strongly sloping, 9-14%	d <input checked="" type="checkbox"/>
	Steep, greater than 14%	e <input checked="" type="checkbox"/>

Part I Total

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

3. Moist Color of A1 or Ap	Dark	a <input checked="" type="checkbox"/>
	Moderately dark	b <input checked="" type="checkbox"/>
	Light	c <input type="checkbox"/>
	Very light	d <input type="checkbox"/>
4. E Horizon Present	Yes	a <input checked="" type="checkbox"/>
	No	b <input checked="" type="checkbox"/>

5. Thickness of A Horizon or A+E Horizons	Thick, more than 12"	a <input checked="" type="checkbox"/>
	Moderately thick, 7-12"	b <input type="checkbox"/>
	Moderately thin, 3-7"	c <input type="checkbox"/>
	Thin, less than 3"	d <input type="checkbox"/>

6. Texture of A Horizon	Coarse	a <input checked="" type="checkbox"/>
	Moderately coarse	b <input checked="" type="checkbox"/>
	Medium	c <input type="checkbox"/>
	Moderately fine	d <input type="checkbox"/>
	Fine	e <input type="checkbox"/>

7. B Horizon Present	Yes	a <input checked="" type="checkbox"/>
	No	b <input checked="" type="checkbox"/>

8. Moist Color of B Horizon (or C Horizon if B is absent)	Uniform brown or dark brown or strong brown	a <input checked="" type="checkbox"/>
	Includes olive or yellowish or reddish cast or tints or other redox features	b <input type="checkbox"/>
	Grayish brown or olive gray, no redox features	c <input type="checkbox"/>

9. Moist color of B Horizon (or C Horizon if B is absent)	Gray with redox features	a <input type="checkbox"/>
	Uniform gray, May have bluish or greenish cast or rust redox features around roots or small pores	b <input type="checkbox"/>
	Black, May contain few rust redox	c <input type="checkbox"/>

None of the above	None of the above	d <input checked="" type="checkbox"/>
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10. Texture of B Horizon (or C Horizon if B is absent or buried A if 24" overwash)	Coarse	a <input type="checkbox"/>
	Moderately coarse	b <input checked="" type="checkbox"/>
	Medium	c <input type="checkbox"/>
	Moderately fine	d <input type="checkbox"/>
	Fine	e <input type="checkbox"/>

11. Soil Depth	Deep, more than 40"	a <input type="checkbox"/>
	Moderately deep, 30-40"	b <input type="checkbox"/>
	Moderately shallow, 20-30"	c <input type="checkbox"/>
	Shallow, less than 20"	d <input type="checkbox"/>

12. Soil Parent Material	Glacial drift or local sediments from glacial drift	a <input type="checkbox"/>
	Loess	b <input type="checkbox"/>
	Alluvium or colluvium	c <input type="checkbox"/>
	Residuum	d <input type="checkbox"/>
	Peat or organic	e <input type="checkbox"/>

13. Native Vegetation

Forest	Forest	a <input type="checkbox"/>
Transition	Transition	b <input type="checkbox"/>
Prairie	Prairie	c <input type="checkbox"/>
Marsh	Marsh	d <input type="checkbox"/>

14. Surface Drainage

Rapid	Rapid	a <input type="checkbox"/>
Medium	Medium	b <input type="checkbox"/>
Slow	Slow	c <input type="checkbox"/>
Ponded	Ponded	d <input type="checkbox"/>

15. Internal Drainage

Excessively drained	Well drained	a <input type="checkbox"/>
Somewhat poorly drained	Somewhat poorly drained	b <input type="checkbox"/>
Poorly drained	Poorly drained	c <input type="checkbox"/>
Very poorly drained	Very poorly drained	d <input type="checkbox"/>

16. Erosion Class

Overwash	Overwash	a <input type="checkbox"/>
Uneroded or slightly eroded	Uneroded or slightly eroded	b <input type="checkbox"/>
Moderately eroded	Moderately eroded	c <input type="checkbox"/>
Severely eroded	Severely eroded	d <input type="checkbox"/>

17. Calcareous Surface Soil

Yes	Yes	a <input type="checkbox"/>
No	No	b <input type="checkbox"/>

18. Calcereous B Horizon (or C Horizon if B is absent)

Yes	Yes	a <input type="checkbox"/>
No	No	b <input type="checkbox"/>

19. Stoniness or Rockiness

Yes	Yes	a <input type="checkbox"/>
No	No	b <input type="checkbox"/>

Part II Total

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

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

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

Limitations for building sites for houses with basements

31. Bedrock	Yes <input type="checkbox"/> No <input type="checkbox"/>
32. Evidence of water table	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
33. Flooding	Yes <input type="checkbox"/> No <input type="checkbox"/>
34. Shrink-swell	Yes <input type="checkbox"/> No <input type="checkbox"/>
Limitations for conventional septic tank absorption fields	
35. Bedrock	Yes <input type="checkbox"/> No <input type="checkbox"/>
36. Flooding	Yes <input type="checkbox"/> No <input type="checkbox"/>
37. Evidence of water table	Yes <input type="checkbox"/> No <input type="checkbox"/>
Source of topsoil	
38. Texture group	Suitable <input type="checkbox"/> Not Suitable <input type="checkbox"/>
39. Thickness of A horizon	Suitable <input type="checkbox"/> Not Suitable <input type="checkbox"/>
40. Evidence of water table	Suitable <input type="checkbox"/> Not Suitable <input type="checkbox"/>
Part IV Total <input type="text"/>	
Part V Total <input type="text"/>	

Part IV. Evaluation of Management Practices (7 points)

Practices to overcome soil limitations

24. Surface drainage	Yes <input type="checkbox"/> No <input type="checkbox"/>
25. Subsurface drainage	Yes <input type="checkbox"/> No <input type="checkbox"/>
26. Grass waterway	Yes <input type="checkbox"/> No <input type="checkbox"/>
27. Contouring	Yes <input type="checkbox"/> No <input type="checkbox"/>
28. Strip cropping	Yes <input type="checkbox"/> No <input type="checkbox"/>
29. Terracing	Yes <input type="checkbox"/> No <input type="checkbox"/>
30. Conservation tillage	Yes <input type="checkbox"/> No <input type="checkbox"/>

JOHNSON COUNTY
IOWA STATE UNIVERSITY
Extension and Outreach

Prepared by Gerald A. Miller, extension agronomist
PM 1107 Revised June 2013
Electronic version June 2013

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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.

Part I. Surface Features (2 points)

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

Part I Total

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

3. Moist Color of A1 or Ap	Dark Moderately dark Light Very light	a b c d
4. E Horizon Present	Yes No	a b
5. Thickness of A Horizon or A+E Horizons	Thick, more than 12" Moderately thick, 7-12" Moderately thin, 3-7" Thin, less than 3"	a b c d
6. Texture of A Horizon	Coarse Moderately coarse Medium Moderately fine Fine	a b c d e
7. B Horizon Present	Yes No	a b
8. Moist Color of B Horizon (or C Horizon if B is absent)	Uniform brown or dark brown or strong brown Uniform brown or dark brown or strong brown. Includes olive or yellowish or reddish cast or tints or other redox features	a b c
9. Moist Color of B Horizon (or C Horizon if B is absent)	Grayish brown or olive gray, no redox features Grayish brown or olive gray with gray or rust redox features None of the above	c d e
10. Texture of B Horizon (or C Horizon if B is absent or buried A if 24" overwash)	Coarse Moderately coarse Medium Moderately fine Fine	a b c d e
11. Soil Depth	Deep, more than 40" Moderately deep, 30-40" Moderately shallow, 20-30" Shallow, less than 20"	a b c d
12. Soil Parent Material	Glacial drift or local sediments from glacial drift Loess Alluvium or colluvium Residuum Peat or organic	a b c d
13. Native Vegetation	Forest Transition Prairie Marsh	a b c d
14. Surface Drainage	Rapid Medium Slow Ponded	a b c d
15. Internal Drainage	Excessively drained Well drained Somewhat poorly drained Poorly drained Very poorly drained	a b c d e
16. Erosion Class	Overwash Uneroded or slightly eroded Moderately eroded Severely eroded Gullied land	a b c d e
17. Calcareous Surface Soil	Yes No	a b
18. Calcareous B Horizon (or C Horizon if B is absent)	Yes No	a b
19. Stoniness or Rockiness	Yes No	a b

Part II Total

Soil Site No. Xit 2

Contestant Name _____

Contestant No. _____

School Name _____

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

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

20. Land Capability Class	I. Few limitations	a <input checked="" type="checkbox"/>
	II. Some limitations	b <input type="checkbox"/>
	III. Severe limitations	c <input type="checkbox"/>
	IV. Very severe limitations	d <input type="checkbox"/>
	None of the above	e <input type="checkbox"/>
21. Land Capability Class	V. Noncrop land	a <input type="checkbox"/>
	VI. Unsuitable for cultivation	b <input type="checkbox"/>
	VII. Restricted for agric.	c <input type="checkbox"/>
	VIII. Nonegricultural	d <input type="checkbox"/>
	None of the above	e <input checked="" type="checkbox"/>
22. Land Capability Subclass	None	a <input type="checkbox"/>
	e erosion	b <input checked="" type="checkbox"/>
	w wetness	c <input type="checkbox"/>
	s soil	d <input type="checkbox"/>
	c climate	e <input type="checkbox"/>
23. Productivity Potential	High	a <input type="checkbox"/>
	Medium	b <input type="checkbox"/>
	Low	c <input type="checkbox"/>
	Unsuited	d <input type="checkbox"/>

Part III Total

Part IV. Evaluation of Management Practices (7 points)

Practices to overcome soil limitations

24. Surface drainage	Yes	a <input type="checkbox"/>
	No	b <input checked="" type="checkbox"/>
25. Subsurface drainage	Yes	a <input type="checkbox"/>
	No	b <input type="checkbox"/>
26. Grass waterway	Yes	a <input checked="" type="checkbox"/>
	No	b <input type="checkbox"/>
27. Contouring	Yes	a <input type="checkbox"/>
	No	b <input type="checkbox"/>
28. Strip cropping	Yes	a <input checked="" type="checkbox"/>
	No	b <input type="checkbox"/>
29. Terracing	Yes	a <input checked="" type="checkbox"/>
	No	b <input type="checkbox"/>
30. Conservation tillage	Yes	a <input checked="" type="checkbox"/>
	No	b <input type="checkbox"/>

Part IV Total

...and Justice for All

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Part V. Limitations for building sites for houses with basements

31. Bedrock	Yes	a <input type="checkbox"/>
	No	b <input checked="" type="checkbox"/>
32. Evidence of water table	Yes	a <input type="checkbox"/>
	No	b <input checked="" type="checkbox"/>
33. Flooding	Yes	a <input type="checkbox"/>
	No	b <input checked="" type="checkbox"/>
34. Shrink-swell	Yes	a <input type="checkbox"/>
	No	b <input type="checkbox"/>

Limitations for conventional septic tank absorption fields

35. Bedrock	Yes	a <input type="checkbox"/>
	No	b <input checked="" type="checkbox"/>
36. Flooding	Yes	a <input type="checkbox"/>
	No	b <input checked="" type="checkbox"/>
37. Evidence of water table	Yes	a <input type="checkbox"/>
	No	b <input type="checkbox"/>

Source of topsoil

38. Texture group	Suitable	a <input type="checkbox"/>
	Not Suitable	b <input checked="" type="checkbox"/>
39. Thickness of A horizon	Suitable	a <input type="checkbox"/>
	Not Suitable	b <input checked="" type="checkbox"/>
40. Evidence of water table	Suitable	a <input type="checkbox"/>
	Not Suitable	b <input checked="" type="checkbox"/>

Part V Total <input type="text"/>	Scoring Summary
	Part I <input type="checkbox"/>
	Part II <input type="checkbox"/>
	Part III <input type="checkbox"/>
	Part IV <input type="checkbox"/>
	Part V <input type="checkbox"/>
	Total Score <input type="text"/>

IOWA STATE UNIVERSITY
Extension and Outreach

Prepared by Gerald A. Miller, extension agronomist
PM 1107 Revised June 2013
Electronic version June 2013

Iowa Soil Judging Score Card

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

Part I. Surface Features (2 points)

1. Landscape Position	Upland Intermittent drainageways Footslope Terrace Bottomland	a <input checked="" type="checkbox"/> b <input type="checkbox"/> c <input type="checkbox"/> d <input type="checkbox"/> e <input type="checkbox"/>
2. Slope	Nearly level, 0-2% Gently sloping, 2-5% Moderately sloping, 5-9% Strongly sloping, 9-14% Steep, greater than 14%	a <input checked="" type="checkbox"/> b <input type="checkbox"/> c <input type="checkbox"/> d <input type="checkbox"/> e <input type="checkbox"/>

Part I Total

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

3. Moist Color of A1 or Ap	Dark Moderately dark Light Very light	a <input checked="" type="checkbox"/> b <input type="checkbox"/> c <input type="checkbox"/> d <input type="checkbox"/>
4. E Horizon Present	Yes No	a <input checked="" type="checkbox"/> b <input type="checkbox"/> c <input type="checkbox"/> d <input type="checkbox"/>
5. Thickness of A Horizon or A+E Horizons	Thick, more than 12" Moderately thick, 7-12" Moderately thin, 3-7" Thin, less than 3"	a <input checked="" type="checkbox"/> b <input type="checkbox"/> c <input type="checkbox"/> d <input type="checkbox"/>
6. Texture of A Horizon	Coarse Moderately coarse Medium Moderately fine Fine	a <input checked="" type="checkbox"/> b <input type="checkbox"/> c <input type="checkbox"/> d <input type="checkbox"/> e <input type="checkbox"/>
7. B Horizon Present	Yes No	a <input checked="" type="checkbox"/> b <input type="checkbox"/>
8. Moist Color of B Horizon (or C Horizon if B is absent)	Uniform brown or dark brown or strong brown Uniform brown or dark brown or strong brown. Includes olive or yellowish or reddish cast or tints or other redox features	a <input checked="" type="checkbox"/> b <input type="checkbox"/> c <input type="checkbox"/> d <input type="checkbox"/> e <input type="checkbox"/>
9. Moist color of B Horizon (or C Horizon if B is absent)	Gray with redox features Uniform gray. May have bluish or greenish cast or rust redox features around roots or small pores Black. May contain few rust redox	a <input type="checkbox"/> b <input type="checkbox"/> c <input type="checkbox"/> d <input checked="" type="checkbox"/>

Part II (continued)

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

Part II Total

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

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

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

Limitations for building sites for houses with basements	
31. Bedrock	a <input type="checkbox"/> b <input checked="" type="checkbox"/>
32. Evidence of water table	a <input type="checkbox"/> b <input type="checkbox"/>
33. Flooding	a <input type="checkbox"/> b <input checked="" type="checkbox"/>
34. Shrink-swell	a <input type="checkbox"/> b <input type="checkbox"/>
Limitations for conventional septic tank absorption fields	
35. Bedrock	a <input type="checkbox"/> b <input checked="" type="checkbox"/>
36. Flooding	a <input type="checkbox"/> b <input type="checkbox"/>
37. Evidence of water table	a <input type="checkbox"/> b <input type="checkbox"/>
Source of topsoil	
38. Texture group	a <input type="checkbox"/> b <input checked="" type="checkbox"/>
39. Thickness of A horizon	a <input type="checkbox"/> b <input checked="" type="checkbox"/>
40. Evidence of water table	a <input type="checkbox"/> b <input checked="" type="checkbox"/>
	Part V Total <input type="text"/>

Part IV. Evaluation of Management Practices (7 points)

Practices to overcome soil limitations

24. Surface drainage	Yes No	a <input checked="" type="checkbox"/> b <input type="checkbox"/>
25. Subsurface drainage	Yes No	a <input type="checkbox"/> b <input type="checkbox"/>
26. Grass waterway	Yes No	a <input type="checkbox"/> b <input checked="" type="checkbox"/>
27. Contouring	Yes No	a <input type="checkbox"/> b <input checked="" type="checkbox"/>
28. Strip cropping	Yes No	a <input type="checkbox"/> b <input checked="" type="checkbox"/>
29. Terracing	Yes No	a <input type="checkbox"/> b <input checked="" type="checkbox"/>
30. Conservation tillage	Yes No	a <input checked="" type="checkbox"/> b <input type="checkbox"/>
		Part IV Total <input type="text"/>

IOWA STATE UNIVERSITY
Extension and Outreach

Prepared by Gerald A. Miller, extension agronomist.

PM 1107 Revised June 2013

Electronic version June 2013

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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.

Part I. Surface Features (2 points)

1. Landscape Position	Upland	a <input checked="" type="checkbox"/>	b <input type="checkbox"/>	c <input type="checkbox"/>	d <input type="checkbox"/>	e <input type="checkbox"/>
	Intermittent drainageways	a <input type="checkbox"/>	b <input type="checkbox"/>	c <input type="checkbox"/>	d <input type="checkbox"/>	e <input type="checkbox"/>
	Footslope	a <input type="checkbox"/>	b <input type="checkbox"/>	c <input type="checkbox"/>	d <input type="checkbox"/>	e <input type="checkbox"/>
	Terrace	a <input type="checkbox"/>	b <input type="checkbox"/>	c <input type="checkbox"/>	d <input type="checkbox"/>	e <input type="checkbox"/>
	Bottomland	a <input type="checkbox"/>	b <input type="checkbox"/>	c <input type="checkbox"/>	d <input type="checkbox"/>	e <input type="checkbox"/>
2. Slope	Nearly level, 0-2%	a <input type="checkbox"/>	b <input type="checkbox"/>	c <input type="checkbox"/>	d <input type="checkbox"/>	e <input type="checkbox"/>
	Gently sloping, 2-5%	a <input type="checkbox"/>	b <input type="checkbox"/>	c <input type="checkbox"/>	d <input type="checkbox"/>	e <input type="checkbox"/>
	Moderately sloping, 5-9%	a <input checked="" type="checkbox"/>	b <input type="checkbox"/>	c <input type="checkbox"/>	d <input type="checkbox"/>	e <input type="checkbox"/>
	Strongly sloping, 9-14%	a <input type="checkbox"/>	b <input type="checkbox"/>	c <input type="checkbox"/>	d <input type="checkbox"/>	e <input type="checkbox"/>
	Steep, greater than 14%	a <input type="checkbox"/>	b <input type="checkbox"/>	c <input type="checkbox"/>	d <input type="checkbox"/>	e <input type="checkbox"/>

Part II. (continued)

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

Part II Total _____

Contestant Name _____

Soil Site **WAT 4**

Contestant No. _____ School Name _____

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

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

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

Limitations for building sites for houses with basements

31. Bedrock	Yes a b	
32. Evidence of water table	Yes a b	
33. Flooding	Yes a b	
34. Shrink-swell	Yes a b	
	Limitations for conventional septic tank absorption fields <input type="text"/>	
35. Bedrock	Yes a b	
36. Flooding	Yes a b	
37. Evidence of water table	Yes a b	
	Source of topsoil <input type="text"/>	
38. Texture group	Suitable a b	
39. Thickness of A horizon	Suitable a b	
40. Evidence of water table	Suitable a b	
	Part IV Total <input type="text"/>	

Part IV. Evaluation of Management Practices (7 points)

Practices to overcome soil limitations

24. Surface drainage	Yes No	a b
25. Subsurface drainage	Yes No	a b
26. Grass waterway	Yes No	a b
27. Contouring	Yes No	a b
28. Strip cropping	Yes No	a b
29. Terracing	Yes No	a b
30. Conservation tillage	Yes No	a b
	Part IV Total <input type="text"/>	

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Scoring Summary	<input type="text"/>
Part I	<input type="text"/>
Part II	<input type="text"/>
Part III	<input type="text"/>
Part IV	<input type="text"/>
Part V	<input type="text"/>
Total Score	<input type="text"/>