#### 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

a. b. c. d.	very slow rate of erosion under natural conditions is called: Authentic erosion Geologic erosion Accelerated erosion Rill erosion None of the above
or a. b. c.	and in this erosion class has the nearest use potential and field management needs as it did iginally when the settlers first started cultivating it.  Overwash  Moderately eroded Severely eroded Gullied land Slightly eroded
ca a. b. c. d.	some areas, water evaporating from wet soils leaves behind enough to cause leareous conditions.  Calcium carbonate Calcium phosphate Sodium chloride Hydrochloric acid residue None of the above
a. b. c. d.	Soil pH and color Acid test and texture Color and acid test Texture and color None of the above
a. b. c. d.	1.0 mm 2.0 mm 1.0 cm 2.0 cm None of the above
	limitation due to stones or rock fragments may be significant when the soil contains over percent by volume.  2 10 15 20 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 b. 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.	throa. b. c. d.	is an area in which effluent from the septic tank is distributed into the soil ough tiles or perforated pipes that are installed below the ground surface.  Absorption pit Water table Absorption field Septic pit None of the above
38.		ils with fine textures and dense structures have slow rates of water movement that result in, resulting in a limitation for conventional septic tank absorption
		lds.
	a.	Surface ponding and a high water table
	b.	High water table and a root limiting layer
		Inadequate topsoil and surface ponding
		Shrink-swell and ponding
	e.	Root limiting layer and shrink-swell
39.		increases absorption and retention of moisture and nutrients for plant growth,
		nances structural development and stability of soil aggregates, and generally improves soil
	-	ality.
		Bedrock
		Organic matter
		Soil moisture
		Vegetation None of the above
	e.	None of the above
40.	Pre	esence of at 12 inches or immediately below the dark surface layer will be used
		determine evidence of a water table in topsoil.
		Roots
		Overwash
		Redox features
		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 lows, PM 1106, for interpretation of this form. Mark only one box per question.

### Part I. Surface Features (2 points)

	Intermittent drainageways Footslope Terrace Bottomland	_ O O O
2. Slope	Nearly level, 0-2% Gently sloping, 2-5% Moderately sloping, 5-9% Strongly sloping, 9-14% Steep, greater than 14%	X

144	ran II. soil reatures—Ine Profile (17 points)	me (1) points)		
c:	Moist Color of A1 or Ap	Dark	· a	X
		Moderately dark	م	
		Light Very light	00	
4	E Horizon Present	Yes No	a 0	X
ட்	Thickness of A Horizon or A+E Horizons	Thick, more than 12" Moderately thick, 7-12" Moderately thin, 3-7" Thin, less than 3"	вдор	
69	Texture of A Horizon	Coarse Moderately coarse Medium Moderately fine	0000	
7	B Horizon Present	Yes	ю <u>Ф</u>	V
	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. Grayish brown or olive gray, no redox features Grayish brown or olive gray with gray or rust redox features. None of the above		Y
6	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	a _o	
		Black. May contain few rust redox	0 7	

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Contestant Name	School Name
Soil Site No.	Contestant No.

Part II. (continued)

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Coarse Moderately coarse	Medium 5, Moderately fine	Deep, more than 40" Moderately deep, 30-40" Moderately shallow, 20-30" Shallow, less than 20"	Glacial drift or local sediments from glacial drift Loess Alluvium or colluvium Residuum Peat or organic	Forest Transition Prairie Marsh	Rapid Medium Slow Ponded	Excessively drained Well drained Somewhat poorly drained Poorly drained	Overwash Uneroded or slightly eroded Moderately eroded Severely eroded Gullied land	Yes No	Yes No	Yes No
10. Texture of B Horizon (or C Horizon if B is	absent or buried A	11. Soil Depth	12. Soil Parent Material	13. Native Vegetation	14. Surface Drainage	15. Internal Drainage	16. Erosion Class	17. Calcareous Surface Soil	18. Calcareous B Horizon (or C Horizon if B is absent)	19. Stoniness or Rockiness

20. Land Capability Class	I. Few limitations	г <sub>в</sub>
	II. Some limitations	q
	III. Severe limitations	S
	IV. Very severe limitations	P
	None of the above	Φ
21. Land Capability Class	V. Noncropland	a
	VI. Unsuited for cultivation	٩
	VII. Restricted for agric.	O
	VIII. Nonagricultural	0
	None of the above	(a)
22. Land Capability	None	a ×
Subclass	e erosion	4
	w wetness	υ
	ssoil	ď
	c climate	в
23. Productivity Potential	High	X e
	Medium	_ ο
	Low	۵
	Unsuited	р

### Part IV. Evaluation of Management Practices (7 points)

Practices to overcome soil limitations

24. Surface drainage	Yes No	X .
25. Subsurface drainage	Yes No	e d
	Yes No	p a
	Yes No	8 X
	Yes No	e d
	Yes No	p a
30. Conservation tillage	Yes No	р
		Part IV Total

### Extension and Outreach

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

Scoring Summary Partl Parl Part III Part IV PartV Total Score ....and justice for all To S. D. Debits of trace, and control and the basis of need, color, national origin, age, disability, and where applicable, sow, marrial status, familial status, familial status, and contact USDA's TABET Candro assably to be a specification of a section of the pass of need, color, national origin, age, disability, and where applicable, sow, marrial status, familial status, familial status, and contact USDA's TABET Candro assably to real subject to the pass of need, and the pass of need, contact USDA's TABET Candro and TOPD, To life a complaint of destination with the US. Department of Agriculture, Calbran A. Kress, director, Cooperative Extension work. Acts of May 8 and Juno 20, 1914, in cooperation with the US. Department of Agriculture, Calbran A. Kress, director, Cooperative Extension Service, lowe Statu University of Science and Tochnology, Ames, lowe.

### Part V. Suitability of Soils for Nonagricultural Uses (10 points) Limitations for building sites for houses with basements

31. Bedrock	Yes No	<u>в</u> д
32. Evidence of water table	Yes	8 0
33. Flooding	Yes	A
34. Shrink-swell	Yes	а <del>о</del>  Х
Limitations for conventional septic tank absorption fields	septic tank absorption fields	
35. Bedrock	Yes No	N D
36. Flooding	Yes	ш <u>Ф</u>
37. Evidence of water table	Yes No	N d
Source of topsoil		
38. Texture group	Suitable Not Suitable	т Ф Д
39. Thickness of A horizon	Suitable Not Suitable	10 -0 X
40. Evidence of water table	Suitable Not Suitable	<i>a</i> 4
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**IOWA STATE UNIVERSITY** 

## lowa Soil Judging Score Card

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

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. Landscape Position	Upland Intermittent drainageways Footslope Terrace Rettemband	×	
2. Slope	Nearly level, 0-2% Gently sloping, 2-5% Moderately sloping, 5-9% Strongly sloping, 9-14% Steep, greater than 14%	× 0 0 0 0	
Part II. Soil Features—The Profile (17 points)		Part   Total	
3. Moist Color of A1 or Ap	Dark Moderately dark Light Very light	Q C Q a	
4. E Horizon Present	Yes No	~ <u>\</u>	
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 0 0 0	
6. Texture of A Horizon	Coarse Moderately coarse Medium Moderately fine Fine	× 0 0 0 0 0	
7. B Horizon Present	Yes No	а <b>о</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 Grayish brown or olive gray, no redox features Grayish brown or olive gray, with gray or rust redox features None of the above	a 20 50	*
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	в <b>Б</b> о	

Soil Site No.

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Part II. (continued)

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Coarse	Moderately coarse	Medium Moderately fine	Fine	Deep, more than 40"	Moderately deep, 30-40"	Moderately shallow, 20-30"	Shallow, less than 20"	Glacial drift or local sediments from	glacial drift	Loess	Alluvium or colluvium	Residuum	Peat or organic	Forest	Transition	Prairie	Marsh	Rapid	Medium	Slow	Ponded	Excessively drained	Well drained	Somewhat poorly drained	Poorly drained	Very poorly drained	Overwash	Uneroded or slightly eroded	Moderately eroded	Severely eroded	Gullied land	Yes	No	Yes	202	Yes No
10. Texture of B Horizon	(or C Horizon if B is	absent of burled A if 24" overwash)		11. Soil Depth				12. Soil Parent Material						13. Native Vegetation				14. Surface Drainage				15. Internal Drainage					16. Erosion Class					17. Calcareous Surface Soil		18. Calcareous B Horizon	(or c norizon ii b is absent)	19. Stoniness or Rockiness

Part II Total

None of the above

20. Land Capability Class	I. Few limitations	×
	II. Some limitations	q
	III. Severe limitations	O .
	IV. Very severe limitations	P
	None of the above	Ð
21. Land Capability Class	V. Noncropland	co.
	VI. Unsuited for cultivation	٩
	VII. Restricted for agric.	v
	VIII. Nonagricultural	70
	None of the above	×
22. Land Capability	None	×
Subclass	e erosian	Q
	w wetness	O
	ssoil	P
	c climate	9
23. Productivity Potential	High	, s
	Medium	٩
	Low	٥
	Unsuited	p
		Part III Total

#### Part IV. Evaluation of Management Practices (7 points) Practices to overcome soil limitations

24. Surface drainage	Yes	P a
25. Subsurface drainage	Yes	a q
26. Grass waterway	Yes No	а У
27. Contouring	Yes No	а Х
28. Strip cropping	Yes No	× 0
29. Terracing	Yes	D a
30. Conservation tillage	Yes No	в q

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Part IV Total

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Electronic version June 2013

Part III Part IV Part V Total Score

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Cooperative Extension Service, lows Status University of Science and Tochnology, Ames, lows.

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

31. Bedrock	Yes No	a d
32. Evidence of water table	Yes	a o
33. Flooding	Yes	N N
34. Shrink-swell	Yes No	<u>в</u> Д
Limitations for conventional septic tank absorption fields	eptic tank absorption fields	
35. Bedrock	Yes No	<b>X</b>
36. Flooding	Yes No	α Δ.
37. Evidence of water table	Yes No	X q
Source of topsoil		
38. Texture group	Suitable Not Suitable	Ω ω
39. Thickness of A horizon	Suitable Not Suitable	р д Х
40. Evidence of water table	Suitable Not Suitable	X Q
		Part V Total
<i>v</i>		Scoring Summan
		Part II

## Iowa Soil Judging Score Card

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

### Part I. Surface Features (2 points)

	Pardenana Darition	700 [1]	×	
	railuscape rusikuli	Opiailu Intermittent drainageways	<u></u>	
		Footslope	S S	
		Terrace Bottomland	p ə	
5	Slope	Nearly level, 0-2% Gently sloping, 2-5% Moderately sloping, 5-9% Strongly sloping, 9-14% Steep, greater than 14%	W G G G G	
7	Part II. Soil Features—The Profile (17 points)		Part   Total	П
က်	Moist Color of A1 or Ap	Dark Moderately dark Light Very light	Q C Q. B	
4.	E Horizon Present	Yes No	X	
ഥ	Thickness of A Horizon or A+E Horizons	Thick, more than 12" Moderately thick, 7-12" Moderately thin, 3-7" Thin, less than 3"	Q C Q B	
ú.	Texture of A Horizon	Goarse Moderately coarse Medium Moderately fine Fine	W G C C C C	
L.	B Horizon Present	Yes No	X	
αi	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 Grayish brown or olive gray, no redox features Grayish brown or olive gray, with gray or rust redox features None of the above	X	
oi oi	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 None of the above	Q C Q B	

Soil Site No.

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Part II. (continued)

Contestant No.

Texture of B Horizon (or C Horizon if B is absent or huried A	Coarse Moderately coarse Medium	ത 🕮 വ	
if 24" overwash)	Moderately fine Fine	ש ם כ	X
	Deep, more than 40" Moderately deep, 30-40" Moderately shallow, 20-30" Shallow, less than 20"	асор	XII
12. Soil Parent Material	Glacial drift or local sediments from glacial drift Loess Alluvium or colluvium Residuum	ത ഗ ധ വ ത	
13. Native Vegetation	Forest Transition Prairie Marsh	G C Q. 80	l W
14. Surface Drainage	Rapid Medium Slow Ponded	מרטש	
15. Internal Drainage	Excessively drained Well drained Somewhat poorly drained Poorly drained	ФСОСБ	X
	Overwash Uneroded or slightly eroded Moderately eroded Severely eroded Gullied land	שסטבם	X
17. Calcareous Surface Soil	Yes No	<u>C</u> ø	X
Calcareous B Horizon (or C Horizon if B is absent)	Yes No	с. D	X
19. Stoniness or Rockiness	Yes No	по	R

Part II Total

Part V. Suitability of Soils for Nonagricultural Uses (10 points)
Limitations for building sites for houses with basements

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Yes

31. Bedrock

Yes

Evidence of water table

32.

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Limitations for conventional septic tank absorption fields

Yes

35. Bedrock

Yes

36. Flooding

Yes

37. Evidence of water table

Source of topsoil 38. Texture group

Yes

34. Shrink-swell

33. Flooding

Yes

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Not Suitable

Suitable

Not Suitable

Suitable

39. Thickness of A horizon

Suitable Not Suitable

40. Evidence of water table

20. Land Capability Class	1. Few limitations	æ
	II. Some limitations	×
	III. Severe limitations	S
	IV. Very severe limitations	P
7.	None of the above	Φ
21. Land Capability Class	V. Noncropland	æ
	VI. Unsuited for cultivation	Д
	VII. Restricted for agric.	ပ
	VIII. Nonagricultural	0
	None of the above	×
22. Land Capability	None	O
Subclass	e erosian	×
	w wetness	υ
	soil	70
	c climate	в
23. Productivity Potential	High	×
	Medium	q
	Low	ပ
	Unsuited	p
		Part III Total

### Part IV. Evaluation of Management Practices (7 points)

Practices to overcome soil limitations

24. Surface drainage	Yes No	p a
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26. Grass waterway	Yes No	b b
27. Contouring	Yes No	а р
28. Strip cropping	Yes No	a X
29. Terracing	Yes No	A d
30. Conservation tillage	Yes No	P a

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Part IV Total

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Scoring Summary

Part V Total

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Total Score

Part III

PM 1107 Revised June 2013 Electronic version June 2013 ....and ustation for all its programs and estivities on the basis of race, color, national origin, age, detability, and where applicable, sax, marriel status, paramel status, paramel status, printing discrimination, general beliefs, ropited, and status, paramel status, paramel status, problem of session married beliefs who require alternative meens for communication of program information (Braille, large print, audiopage, et.,) should contact USDAs TARGET Candard Vassington, 10 (2022-2028, prof.) or of 1800-2022-2727 (voice) or 2022-2727 (voice) or

## lowa 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)

Nearly level, 0-2%	ntermittent drainageways
Gently sloping, 2-5%	Footslope
Moderately sloping, 5-9%	Frrace
Strongly sloping, 9-14%	Sottomland
Steep, greater than 14%	% 9,5-9% -14% n.14%

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

Moist Color of A1 or An	Dark	n	×
<u>t</u>	Moderately dark Light	ں م	4
	Very light	P	
E Horizon Present	Yes No	aО	X
Thickness of A Horizon or A+E Horizons	Thick, more than 12." Moderately thick, 7-12." Moderately thin, 3-7." Thin, less than 3"	ם ט בע פע	X
Texture of A Horizon	Coarse Moderately coarse Medium Moderately fine Fine	вссов	
B Horizon Present	Yes No	вФ	X
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 Grayish brown or olive gray, no redox features Grayish brown or olive gray with gray or rust redox features	е <u>со</u> ра	X
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	סרטים מ	

Part II Total

2	Co
	2

School Name

Part II. (continued)

Contestant No.

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

20. Land Capability Class	I. Few limitations	ro
	II. Some limitations	×
46	III. Severe limitations	0
	IV. Very severe limitations	P
	None of the above	ø.
21. Land Capability Class	V. Noncropland	ro
	VI. Unsuited for cultivation	q
	VII. Restricted for agric.	O
	VIII, Nonagricultural	P
	None of the above	× 0
22. Land Capability	None	В
Subclass	e erosion	X
	w wetness	v
	soil	P
	c climate	Ф
23. Productivity Potential	High	×
	Medium	q
	Low	S
	Unsuited	P
		Daniel III Takel

### Part IV. Evaluation of Management Practices (7 points) Practices to overcome soil limitations

25. Subsurface drainage Yes No 26. Grass waterway Yes No 27. Contouring Yes No 28. Strip cropping Yes No 29. Terracing Yes No 30. Conservation tillage Yes	3 -	×
	q	×
	æ	
	( q	×
	В	×
	q	
	ro	٧
	Δ	
	æ	×
	,q	
	-	×
No	q	

#### **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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### Part V. Suitability of Soils for Nonagricultural Uses (10 points) Limitations for building sites for houses with basements

31. Bedrock	Yes	a
	No	۵.
32. Evidence of water table	Yes	Z .0.
33. Flooding	Yes	о д Х
34. Shrink-swell	Yes No	
Limitations for conventional septic tank absorption fields	eptic tank absorption fields	
35. Bedrock	Yes No	<b>X</b>
36. Flooding	Yes No	a o
37. Evidence of water table	Yes No	<b>X</b>
Source of topsoil		
38. Texture group	Suitable Not Suitable	a D
39. Thickness of A horizon	Suitable Not Suitable	X Q
40. Evidence of water table	Suitable Not Suitable	۵۵
		Part V Total
		Scoring Summa
	× **	Part II Part III Part IV Part IV
		Total Score