State of Iowa
DEPARTMENT OF EDUCATION
Bureau of Technical and Vocational Education
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Iowa FFA Soils Judging Contest
Nevada Community School
Nevada, Iowa
October 22, 1994

1. Which of the following sourses is best qualified to provide assistance to a farmer in planning and establishing a field border on his/her farm?

   a. Soil Conservation service
   b. Seed dealer
   c. Fertilizer dealer
   d. ASCS officer worker

2. The practice of using field borders will be considered to be applied when:

   a. grass and legume seed has been uniformily drilled over the field border.
   b. the border measures exactly 16 feet wide.
   c. seeding has been accomplished by May 15.
   d. the permanent vegetation recommended is established in strips wide enough to turn farm equipment around, or a minimum of 16 feet wide.

3. Which one of the following is not considered to be a benefit received from field borders?

   a. Controls sheet, rill and gully erosion at the edges of a field where rows would otherwise run up and down hill.
   b. Prevents grasshoppers and army worms from destroying the outside rows of corn.
   c. Improves the landscape.
   d. Provides wildlife food and cover.

4. Which one of the following is not an accurate statement concerning terraces?

   a. To be effective terraces must be constructed on a true contour (at same elevation at all points) across a slope.
   b. Terraces are earthen structures that intercept runoff on moderate to steep slopes.
   c. Terraces transform long slopes into a series of shorter slopes.
   d. Terraces reduce the rate of runoff and allow soil particles to settle out.

5. Terraces are beneficial in all but one of the following ways.

   a. Terraces reduce sheet and rill erosion and prevent gully development.
   b. Terraces reduce sediment pollution of lakes and streams.
   c. Grassed frontslopes and backslopes of some terraces provide cover for wildlife.
   d. Terracing eliminates the need for other practices such as conservation tillage, crop rotations, and field borders.

6. From a cross sectional view, terraces have two sides. Which one of the following is a true statement regarding the two sides of a terrace.

   a. The frontslope is the uphill side of a terrace.
   b. The two sides refers to the top of the terrace and the bottom or base of a terrace.
   c. The back slope of a terrace is the uphill side of a terrace and is always in 2:1 ratio.
   d. The backslope of a grassed backslope terrace is farmable.

7. A terrace designed as a channel to slow runoff water and carry it to a stable outlet like a grassed waterway is called a:

a. broadbase terrace.
b. narrow base terrace.
c. storage terrace.
d. gradient terrace.

8. A system of growing row crops in approximately even width strips or bands on the contour in alternate strips with meadow or close growing crops is called:

a. contour farming.
b. field borders.
c. strip cropping.
d. conservation tillage.

9. In general, crops can be categorized into high and low residue producing groups. High residue producing is considered to be more conserving because it provides better protection to the land. Which one of the following is considered to be a low residue producing crop?

a. corn (for grain)
b. soybeans
c. forages
d. oats

10. Any tillage and planting system that leaves at least 30% of the soil surface covered by the previous years crop residue is the definition of:

a. conservation tillage
b. cross-slope farming
c. conventional tillage
d. cover crops

11. What is a tillage system called that leaves the soil undisturbed from harvest to planting except for nutrient injection and planting is done in a seedbed prepared on ridges with sweeps, disk openers, coulters or row cleaners; residue is left on the surface between ridges, and ridges are rebuilt during cultiviation?

a. Mulch till
b. No till
c. Ridge till
d. Clean till

12. A strip of vegetation 15 - 25 feet wide that is planted on crop land next to streams, ponds, and lakes for the purpose of removing sediment, organic matter, and other pollutants from runoff is refered to as a:

a. buffer strip.
b. filter strip.
c. strip crop.
d. diversion.

13. Which one of the following best defines soil judging?

a. Soil judging is the way we determine the crop producing ability of a soil.
b. The method of determining the texture of the soil.
c. Soil judging consists of evaluating certain properties of a soil and interpreting these evaluations into recommendations for land use.
d. A contest designed to motivate students to conserve soil.

14. Which of the following are surface features that influence soil development?

a. Vegetation and profile.
b. Parent material and surface drainage.
c. Texture and horizon.
d. Landscape position and slope.

15. A reminant of a former bottomland that represents a time when the stream was at a higher level is a definition of a:

a. footslope
b. terrace
c. border strip
d. intermittent drainageway

16. What is the percent of slope on land where the elevation falls 6 feet in 80 feet of horizontal distance?

a. 7.5 % b. 6.5% c. 17.5 % d. 8.0%

17. Which one of the following describes a soil profile?

a. A chart showing the percent of sand, silt, and clay.
b. A vertical section through the layers of the soil, extending downward from the surface of the soil through the plant root zone.
c. Profile of the soil refers to its surface features such as the lay of the land.
d. All of the above together describes the soil profile.

18. Which one of the following correctly explains the character of each horizon of the soil?

a. The gradient of the slope determines the character of each soil horizon.
b. The climate in which the soil developed determines the number of horizons in the soil profile.
c. The character of each horizon is a result of the nature of its parent material and the physical, chemical, and biological processes that have acted upon it.
d. Horizons are directly the result of soil layers having been developed in the soil profile.

19. Which one of the following is not a true statement regarding horizons.

a. A single soil profile will not have all the horizons and subhorizons that are possible.
b. Only rarely will one find a soil with an X,Y, and Z horizon.
c. Most Iowa soils have an A, B, and C horizon.
d. The thickness of a soil horizon ranges from a fraction of an inch to perhaps 2 or 3 feet.

20. Which one of the following explains why an A horizon may be designated Ap versus A1?

a. Ap has more plant growth potential, therefore it is designated "P".
b. Ap soils are the soils that have been plowed, therefore may be a mixture of A1 and other horizons.
c. A1 soils and Ap soils are essentially the same, except Ap soils are virgin prairie soils.
d. All of the above are correct depending upon the geographic location of the soil.

21. 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

22. The E horizon is mostly associated with:

a. forest soils and other intensely leached soils.
b. prairie soils with poor internal drainage.
c. sandy soils with excessive internal drainage.
d. muck soils.

23. One of the following is not a true statement concerning dark colored soils.

a. Dark colored soils usually are fertile.
b. Dark color indicates that abundant vegetative growth is supplying plant remains that become organic matter.
c. Dark colored soils are the result of accumulations of organic matter which may be the result of a cool climate or excessive wetness.
d. Dark color is the natural color of volcanic ash which was the parent material of dark soils.

24. The A horizon differ from the B horizon on the basis of:

a. color.
b. texture.
c. structure.
d. All of the above.

25. Which one of the following correctly explains why the B horizon has a greater accumulation of clay than the A horizon?

a. The A horizon is made up largely of organic matter.
b. The B horizon is largely unchanged parent material.
c. The B horizon has accumulated clay leached from the A horizon.
d. The C horizon is so dense that it does not permit particles to leach from above.

26. Which one of the following is not a true statement regarding soil texture?

a. The proportions of sand, silt, and clay in soil determines its texture.
b. Clay particles in soil give it a smooth, "floury" feel.
c. Sand particles give soil a gritty feel.
d. Soil that is plastic and sticky when wet owes its condition to clay particles.

27. Identify the parent material class for dominatly silt-sized rock particles transported and deposited by wind.

a. Alluvium
b. Colluvium
c. Glacial drift
d. Loess

28. Parent material for organic soils is called:

a. Peat.
b. Residuum.
c. Alluvium.
d. Colluvium.

29. Which one of the following is not a native vegetation classification?

a. Marsh
b. Prairie
c. Kelp
d. Transition

30. One of the following is not a true statement regarding calcarious soil conditions.

a. Calcarious soils in some instances are the result of calcareous parent material exposed at the surface due to erosion.
b. Calcarious soils have a pH higher than neutral, therefore are prefered because less fertilizer is required.
c. Calcarious soils may in some cases be the result of the evaporation of water left in pot holes in the field.
d. In some instances snail shells contribute calcium carbonate to soils that are wet because they like the wet inviornment.

31. A very slow rate of soil erosion which, for the most part, is in equilibrium with soil formation is called:

a. wind erosion.
b. accelerated erosion.
c. geological erosion.
d. slight erosion.

32. A Corn Suitability rating of 100 is reserved for soils:

a. located in areas of most favorable weather conditions.
b. that have high yield potential.
c. that can be continuoulsy row-cropped.
d. all of the above.

33. An instrument which is used to estimate the percentage of residue on the surface of soil is known as a:

a. corn producers rule.
b. CAM-line.
c. surveyors transit and rod.
d. all of the above.

34. 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.

35. Soils whose volume change by more than _?_ percent will affect the stability of basement walls, foundations, patios, sidewalks, and concrete floors anchored to the ground.

a. 2
b. 9
c. 6
d. 4

36. Land capability classification is a system that:

a. identifies the limitations and hazards of using the land for agricultural purposes.
b. divides the state into grain producing areas, hay and pasture regions, and wooded area.
c. enable soil scientists to name soils.
d. became oudated and was discontinued due to the widespread us of commercial fertilizer.

37. In the land capability classification, a land that can be adapted for nearly any use by taking some precautions to meet its needs is:

a. Class I.
b. Class II.
c. Class III.
d. Class IV.

38. Soils that are most desirable as a source of topsoil for covering disturbed areas so vegetation can grow are:

a. soils with profile depths of 40 inches or more.
b. dark A horizons 14 inches or more thick.
c. texture in the medium texural group.
d. all of the above.

39. Why is the internal drainage of a soil important when selecting a site for a house?

a. Poor internal drainage increases the likelihood of a wet basement.
b. Intermal drainage infuences the weight the soil can support.
c. The depth of bedrock influences the cost of construction if a basement is dug.
d. Both a and b are correct.

40. The topsoil is likely to be the most permeable layer of soil in the profile. This means that it:

a. is usually hard and dry.
b. will allow water and air to enter and pass through.
c. is high in plant nutrient content.
d. has high water holding capabilities.

1994 FFA SOIL CONTEST

TEST KEY

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