

Soils Ecostation Test
Area 3 Envirothon – Jefferson Sportsman Club, Jefferson County
April 26, 2017

1. Soil erosion can occur on nearly every part of the landscape. Which of the following soil map units would have the greatest erosion potential?
 - a. Gilpin silt loam, 3 to 8 percent slopes
 - b. Gilpin silt loam, 8 to 15 percent slopes
 - c. **Gilpin silt loam, 15 to 25 percent slopes**
 - d. Melvin silt loam, ponded

2. Parent material is the unconsolidated organic and mineral material in which soil forms. What is the parent material of the Berks series?
 - a. Alluvium
 - b. Lacustrine sand and gravel
 - c. **Weathered shale, siltstone and fine grained sandstone**
 - d. Hard limestone rock

3. A soil association is a landscape unit that has a distinctive proportional pattern of soils. Which soil association in Jefferson County is most prominent, in terms of acreage?
 - a. Lowell-Morristown-Brookside association
 - b. Westmoreland-Lowell association
 - c. **Gilpin-Lowell-Morristown association**
 - d. Morristown-Gilpin association

4. Soil series are associated with specific landforms. Which of the following soils is associated with flood plains?
 - a. Clarksburg
 - b. Lowell
 - c. Rigley
 - d. **Tioga**

5. Which of the following soil map units is most commonly found (in terms of acres), in Jefferson County?
 - a. Keene silt loam, 1 to 7 percent slopes
 - b. **Morristown shaly silty clay loam, 25 to 70 percent slopes, boulder**
 - c. Rigley sandy loam, 15 to 25 percent slopes
 - d. Wheeling silt loam, 0 to 3 percent slopes

6. The topography or the arrangement of the natural and artificial physical features of an area can dictate the land use in a county. What is the dominant land use in Jefferson County?
 - a. Cropland
 - b. Urban development
 - c. **Woodland**
 - d. Orchard

7. The Morrystown map unit near the soil pit is MoA. What would be the rating for a septic tank absorption field?
- Slight
 - Moderate
 - Severe**
 - Depth to bedrock
8. An A-horizon contains the highest percentage of organic matter. What is organic matter?
- The accumulation of plant and animal residue in various stages of decomposition**
 - The percentage of sand, silt and clay in soil
 - The slope of the soil map unit, divided by the texture
 - The parent material of a soil
9. The soil series of Bethesda, Fairpoint and Morrystown are found in Jefferson County. What characteristic do all three of these series have in common?
- They were formed in a flood plain
 - They are all mine spoil**
 - Each soil series is very poorly drained
 - Their parent material is glacial till
10. Soil forming material deposited by stream action is called?
- colluvium
 - gravel
 - sand
 - alluvium**
11. What percent of land in Jefferson County is cropland or pasture?
- 16%**
 - 29%
 - 57%
 - 8%
12. What drainage class found in the Berks-Guernsey complex would be considered the shallowest to the top soil?
- well drained
 - moderately well drained**
 - somewhat poorly drained
 - poorly drained
13. Which soil is not prime farmland?
- GsC**
 - PeB
 - WvA
 - CnB

14. On April 27, 1935 Congress passed Public Law 74-46, in which it recognized that "the wastage of soil and moisture resources on farm, grazing, and forest lands . . . is a menace to the national welfare," and it directed the Secretary of Agriculture to establish the Soil Conservation Service (SCS) as a permanent agency in the USDA. In 1994, Congress changed SCS's name to the NRCS to better reflect the broadened scope of the agency's concerns.

NRCS stands for the:

- a. Natural Recreation Creation Service
- b. National Resources Control Service
- c. **Natural Resources Conservation Service**
- d. National Railroad Construction Service

15. Preventing or reducing soil erosion is one of the goals of the USDA – NRCS. Which of the following soil particles is the most erosive?

- a. Sand
- b. **Silt**
- c. Clay
- d. Gravelly sand

16. Through 82 years of experience, SCS and, now NRCS, has developed numerous science-based tools and standards in agronomy, forestry, engineering, economics, wildlife biology and other disciplines that local NRCS field office conservationists use in helping landowners plan and install conservation practices. One of those tools is referred to as the Field Office Technical Guide. Section IV of the FOTG lists "*Conservation Practices*" that a landowner can implement to address resource concerns or problems on their land, including soil erosion concerns.

Which is **NOT** a practice that would help prevent soil erosion?

- a. Conservation Crop Rotation
- b. Cover Crop
- c. **Delayed Mowing of Forages**
- d. Grassed Waterway

17. Soil health, also referred to as soil quality, is defined as the continued capacity of soil to function as a vital living ecosystem that sustains plants, animals, and humans. Key Concepts that lead to improved soil health are:

- Keeping the soil covered as much as possible
- Disturbing the soil as little as possible
- Keeping plants growing throughout the year
- Diversifying as much as possible using crop rotation and cover crops

An indication of a healthy soil would be finding the following when a soil test pit was dug:

- a. Redoximorphic features
- b. Fragipan
- c. **Earthworm burrows**
- d. A thin "A" horizon

18. Tillage is the agricultural preparation of soil by mechanical agitation of various types, such as digging, stirring, and overturning. A good job of tillage can contribute to which of the following:

- a. Reduced infiltration of rain water
- b. Increased soil erosion
- c. Decrease in organic matter
- d. **All of the above**

19. RUSLE2 otherwise known as the *Revised Universal Soil Loss Equation*, is a computer erosion prediction model widely used to estimate rates of soil erosion caused by rainfall and associated overland flow. Which of the following factors does a conservationist need to know to be able to run the RUSLE2 program?

- a. Primary Soil Type in field
- b. Percent Slope & Average Slope Length
- c. Crop rotation & tillage methods
- d. **All of the above**

Site Specific

20. The A-horizon in a soil profile is usually found at the surface. What is the estimated thickness of the A-horizon in this profile?

- a. 0 to 5 inches
- b. **5 to 15 inches**
- c. 15 to 25 inches
- d. There is no A-horizon in this soil profile

21. What is the dominant texture of the upper 15 inches of the soil profile?

- a. Clayey
- b. **Silt loam**
- c. Sandy clay loam
- d. Sand

22. When mottling or redoximorphic features are found in a soil profile, it is an indication of a watertable in the soil. What is the depth of the watertable in this soil?

- a. Between 0 to 10 inches
- b. **Between 10 to 20 inches**
- c. Between 20 to 35 inches
- d. There is no watertable in this soil profile

23. You plan to build the home of your dreams where the soil pit is located. What potential problems could you encounter with this soil?

- a. **slips, seeps, slope**
- b. poor drainage
- c. catina
- d. depth of bedrock is too deep

24. What crops are recommended to grow at the soil pit location?
- no-till corn
 - orchard grass and alfalfa hay
 - Kentucky Bluegrass**
 - No-till small grain
25. What is the rating for the soil at the pit for wetland plants and shallow water areas for wildlife habitat?
- good
 - fair
 - poor
 - very poor**
26. What is the land capability classification for the soil found at the soil pit?
- Ie
 - IIIe
 - IVe
 - Vie**
27. What soil is mapped at the west shore (other side) of the lake we are looking over?
- GoD
 - MrF
 - GpD**
 - GpC
28. What soil complex is the soil mapped at the west lake shore?
- Gilpin-Lowell**
 - Gilpin-Coshocton
 - Gilpin
 - Morristown
29. What drainage class is the complex mapped on the west lake shore?
- poorly
 - somewhat poorly
 - moderately well
 - well**
30. What is the slope of the soil complex mapped on the west shore of the lake?
- 8-15%
 - 15-25%**
 - 15-40%
 - 25-70%