

# Area 4 Envirothon 2016 - Soils

## Pit Specific Questions

1. Topsoil is a critical element in reducing erosion, nutrient runoff, and promoting biodiversity. What is the depth of topsoil in the soil pit?

- a. 0 to 4 inches
- b. 4 to 8 inches
- c. 8 to 12 inches
- d. 12 to 16 inches

2. Soil texture affects several properties of a soil including but not limited to, porosity, infiltration, water holding capacity, and erodibility. What is the texture of the topsoil?

- a. Clay
- b. Loamy Clay
- c. Loam
- d. Silt Loam

3. Structure of the soil directly affects the ability of a plant to establish roots in the soil, which could impact the spreading of invasive species. What is the structure of the topsoil in the soil pit?

- a. Massive
- b. Granular
- c. Single grained
- d. Blocky

4. What is the structure of the soil at a depth of 20 inches in the soil pit?

- a. Massive
- b. Wedge
- c. Prismatic
- d. Blocky

5. Parent material is one of the forming factors that make up and influences the kind of soil that specific soil will be (soil pedon). What is the parent material of the soil in the soil pit?

- a. Loess/Glacial till
- b. Alluvium
- c. Loess/Residuum
- d. Outwash

6. Redoximorphic features indicate the presence of seasonal saturation and occur in forms of concentrations (red/orange colors), and depletions (gray colors). At what depth are redoximorphic features (gray colors) found in the soil pit?

- a. 0 to 12 inches
- b. 12 to 24 inches
- c. 24 to 36 inches
- d. Greater than 36 inches or below bottom of the pit

7. Dense glacial till is unsorted, nonstratified glacial drift consisting of clay, silt, sand and boulders transported and deposited by glacial ice. At what depth does the dense glacial till start in the pit?
- a. 0 to 12 inches
  - b. 12 to 24 inches
  - c. 24 to 36 inches
  - d. Greater than 36 inches or below bottom of the pit
  - e. There isn't dense glacial till in this pit.

### **General Soil Questions**

8. Which statement below best describes soil infiltration?
- a. Downward entry of water into the immediate soil surface
  - b. Water flow through the subsoil
  - c. Physical characteristics of the soil
  - d. Inherent soil quality
9. Soil Surveys are made to?
- a. Understand the complexity of the land
  - b. For the purpose of assessing taxes.
  - c. Understand the geology of an area.
  - d. To provide information about soils and miscellaneous areas.
10. This parent material was deposited by flowing water?
- a. Colluvium deposit
  - b. Deatuvian deposit
  - c. Alluvium deposit
  - d. Lacustrine deposit
11. Soil forms a unique profile based on the results of 5 specific soil forming factors. Which of the following is NOT a recognized soil forming factor?
- a. Climate
  - b. Clay
  - c. Time
  - d. Living Organisms
12. Which of the following statements below list the 3 particle sizes largest to smallest?
- a. Clay – Sand – Silt
  - b. Clay – Silt – Sand
  - c. Silt – Sand – Clay
  - d. Sand – Silt – Clay

13. Soil Survey information is provided in a variety of formats. Which of the following formats would contain the most current and up to date information?

- a. Soil CD's and DVD's
- b. Web Soil Survey
- c. Soil survey booklet
- d. General soil surveys

#### **Questions related to Soil Survey Packet**

14. Each letter/number in the soil map unit symbol (ie. MmC2) represents part of the soil mapunit name. What does the number "2" in the map unit MmC2 stand for?

- a. Third Miamian mapunit in the county
- b. Silt loam
- c. Eroded
- d. 6 to 12 percent slopes

15. A map unit on a soil map represents an area dominated by one or more major kinds of soil. However, not every soil within a map unit acts the same in use and management. Thus, each map unit is developed to identify the major soils for which it is named and minor components. What is the percentage of the minor components in the Wb - Walkkill map unit?

- a. 35%
- b. 10%
- c. 90%
- d. 5%

16. Hydric soils are soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions. These soils can be difficult to manage because of the excess of water. Which of the following soil map units are "not hydric"?

- a. CrB – Crosby Silt Loam
- b. Tr – Treaty Silty Clay Loam
- c. MmC2 – Miamian Silt Loam
- d. Wb – Walkkill Silt Loam

17. Soil surveys offer numerous interpretations for several different land uses including developing camp areas. Which soil component poses a risk of a "ponding" limitation in developing a camp area?

- a. Crosby
- b. Miamian
- c. Treaty
- d. Celina

18. What rating reason would create the biggest limitation on developing a camp area in a Brookston - Br soil map unit?

- a. Slope
- b. Depth to saturated zone
- c. Dusty
- d. Restricted permeability

19. Ponding on a soil can create several issues in land use planning, and the severity varies based on the frequency of the ponding events. What is the ponding frequency of CrB – Crosby silt loam, Southern Ohio Till Plain, 2 to 6 percent slopes?

- a. Frequent
- b. Occasional
- c. Rare
- d. None

20. Geographic information systems (GIS) have been a major advancement to the soil survey program, but also can cause misunderstanding of the detail in mapping and accuracy of the soil line placement. Soil survey maps were intended to be viewed at the scale that they were mapped at. What scale was the soil survey of Darke County mapped on?

- a. 1 : 4,300
- b. 1 : 20,000
- c. 1 : 50,000
- d. 1 : 15,800

21. Soil restrictive layers can prevent plants from effectively growing in a soil and can inhibit water storage capacity. What is the depth to restrictive features for MmB – Miamian silt loam, 2 to 6 percent slopes?

- a. 24 to 32 inches
- b. 25 to 40 inches
- c. 36 to 44 inches
- d. More than 80 inches

22. One of the many reasons that the cooperative soil survey decided to move to a digital platform was the ability to update soil survey information more efficiently, and for the ability to incorporate minor changes to county datasets. What is the date of the Soil Survey Area Data of the Custom Soil Resource Report?

- a. March 10, 2016
- b. September 30, 2010
- c. September 26, 2015
- d. February 1, 1979

23. One of the many interpretations offered in the soil survey is Forestland Harvesting Activities. What is the suitability rating for use of harvesting equipment of MmB – Miamian silt loam, 2 to 6 percent slopes?

- a. Poorly suited
- b. Moderately Suited
- c. Well Suited
- d. Not suited

24. The soil survey contains a typical profile description for each soil map-unit which includes horizons, depths, and textures. What soil texture would you expect to find if you were in an MmC2 soil map-unit in the 2BC horizon from 18 to 29 inches?

- a. Silt Loam
- b. Silty Clay Loam
- c. Clay Loam
- d. Clay

25. The hydrologic soil group (HSG) refers to soil groups according to their runoff potential. What is the HSG for Tr – Treaty silty clay loam, 0 to 1 percent slopes?

- a. A
- b. D
- c. C/D
- d. B/D