2024 Area 2 Envirothon - SOILS

1. Which of the following is not a soil texture?
   A. Silty clay loam
   B. Clay
   C. Loamy sand
   D. Loam

2. How can fertilizer effect the soil?
   A. It can change the PH
   B. Good for soil heath
   C. Replenishes NPK
   D. All of the above

3. PH can directly affect the amount of nutrients available to plants. What is acidic on the pH scale?
   A. 0-14
   B. 0-6
   C. 7
   D. 8-14

4. What does lime do to the soil pH?
   A. Raises PH
   B. Lowers PH
   C. Neutralizes PH
   D. No change

5. Which soil texture has the highest water holding capacity?
   A. Sand
   B. Silt
   C. Clay
   D. Loam

6. This type of soil will form a large/sticky ribbon?
   A. Sand
   B. Silt
   C. Clay
   D. Loam

7. Of the 92 naturally occurring chemical elements in soil, _____ have been shown to be essential elements, meaning that plants cannot grow and complete their life cycles without them.
   A. 17
   B. 30
   C. 55
   D. 92

8. What is a soil ped?
   A. An individual natural soil aggregate
   B. A group of rock fragments in the soil
   C. There is no such thing as a soil ped
   D. A group of natural soil aggregates

9. Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. Who manages the web soil survey?
   A. Environmental protection agency
   B. USDA/Aphis
   C. Ohio Department of Agriculture
   D. USDA/ NRCS

10. Landscape position is important in determining land use. What landform is the soil pit located on?
   A. Floodplain
   B. Kame
   C. Terrace Riser
   D. Upland Hillslope

11. Topsoil is significantly important to plant growth because it contains the majority of available nutrients and water that plants need. In Ohio's temperate climate, on average, how long does it take to form 1 inch of topsoil?
   A. 1000 years
   B. 24 months
   C. 500 years
   D. 10,000 days

12. One of the common parent materials found in Ohio is Loess. Which definition best describes Loess?
   A. Material that has moved from upslope
   B. Windblown silt material
   C. Material that weathered in place
   D. Water deposited material

13. The structure of soil determines how fast water and air will move through the soil system. What is the definition of soil structure?

   A. The relative amounts of sand, silt and clay
   B. The amount of water available to plants in the soil
   C. The point at which soil goes from a solid to a liquid
   D. The arrangement of soil particles into units called aggregates

14. Much of Ohio has been used for row crop agriculture for over 100 years. Due to early farming practices that turned the soil over each season, our soils have experienced a large loss of _____?

A. Organic matter
B. Sand
C. Earthworms
D. Heat

15. A restrictive soil feature is any soil layer that limits water and roots altogether, or into vertical seams and planes of weakness. Which of the following would **NOT** be considered a restrictive soil feature because it is not soil?

A. Gray layer
B. Bedrock
C. Frozen layers
D. Dense glacial till

16. What is the most important reason to keep the soil covered with some sort of vegetation during the winter months?

A. To gain a cash crop during the offseason
B. To prevent soil erosion and nutrient loss
C. To prevent pests from eating living organisms
D. To prevent snow and ice from being on exposed soil

17. In regions such as the western U.S., it is often desirable to reduce the soil PH of highly alkaline soils. What is something that can be used to lower the soil PH?

A. Animal Manure
B. Lime
C. Composting material
D. Organic and Inorganic materials

18. What are the five soil forming factors?

A. Time, Climate, Relief, Parent Material, Living Organisms
B. Time, Climate, Relief, Rainfall, Tillage
C. Time, Climate, Relief, Organic Matter, Slope
D. Time, Climate, Relief, Rainfall, Living Organisms

19. By farming using soil health principles and techniques that include no-till, cover cropping and diverse rotations, more and more farmers are increasing this and improving microbial activity in their soils:

A. Micronutrient Content
B. Water Content
C. Air Content
D. Organic matter Content

20. CEC or Cation exchange Capacity of alkaline soils are commonly higher than those of acid soils with comparable soil textures. What is one reason this is true?

A. Irrigation not only alters the water balance by bringing in more water, it also brings more salts
B. Boron deficiency is common at high PH levels in both sandy soils and clayey soils
C. Soils of low rainfall areas commonly accumulate calcium carbonate
D. Clays that are most common in alkaline soils have the highest amounts of permanent charge

Soils Site Specific Questions – #20-25 Soil Pit / Location to Answer:

21. What is the depth of the A horizon in the soil pit?
    A. 3 to 6 inches
    B. 6 to 12 inches
    C. 12 to 15 inches
    D. Greater than 15 inches

22. What is the texture of the soil in the A horizon?
    A. Clay Loam
    B. Loam
    C. Sandy Loam
    D. Silt Loam

23. What is the structure of the soil between 14 and 18 inches?
    A. Angular
    B. Blocky
    C. Massive
    D. Platy

24. Redoximorphic features are associated with wetness that results from alternating periods of oxidation and reduction of iron and/or manganese in the soil. What is the depth to redoximorphic features in this soil profile?
    A. 0-8 inches
    B. 8-15 inches
    C. 15-25 inches
    D. 25-40+ inches

25. What is formal name of the dense layer found below 18 inches in this pit?
    A. Dense Layer
    B. Fragipan
    C. Parent Material
    D. Plow Pan

☺ All Done! Special Thanks to Area 2 Site Specific Soil/Pit Questions

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