Soils 2024 Envirothon Area Test

1. What is the A horizon known as?

A. Topsoil

B. Subsoil

C. Parent material

D. Bedrock

2. What is the E horizon known as?

A. Topsoil

B. Transition layer

C. Subsoil

D. Bedrock

3. What is the B horizon known as?

A. Bedrock

B. Topsoil

C. Subsoil

D. Parent material

4. What is the R horizon known as?

A. Humus layer

B. Bedrock

C. Subsoil

D. Parent material

5. Soil is made up of three major components. Which soil particle is the smallest in diameter?

A. Sand

B. Silt

C. Clay

6. 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

7. 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

8. What does lime do to the soil pH?

A. Raises PH

B. Lowers PH

C. Neutralizes PH

D. No change

9. Which soil texture has the highest water holding capacity?

A. Sand

B. Silt

C. Clay

10. Where do plants get their nutrients?

A. Soil, fertilizer, plant food

B. Roots

C. Air

D. Rain

11. (Reflecting on the soils pyramid) If your soil sample contains 10% clay and 90 % sand what is it considered?

A. Sandy clay loam

B. Loamy Sand

C. Sand

D. Loam

12. 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

13. 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

14. 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

15. The Urban Land Patton Complex (UpA) is often used to map soil in urban or suburban settings that have significant disturbance from development. Judging from the UpA profile, what indicator would you use to determine that this soil has been disturbed?

A. The subsoil (B horizon) is below 15 in.

B. There is a mixed B/C horizon

C. There is 7 in. of fill material over the original top soil

D. There is till material below 36 in.

16. 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

17. 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

18. 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

19. 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

20. 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

21. 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

22. 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

23. 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

24. 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

25. 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

Site specific

26. What is the structure of the soil in the pit between 10 to 20 inches?

A. Blocky
B. Platy
C. Granular
D. Prismatic

27. Soil texture affects the ability of a soil to hold and release nutrients. What is the texture of the topsoil?

A. Clay

B. Silt Loam

C. Clay Loam

D. Sandy Silt

28. This Envirothon Pit is located at the Gwynne Conservation Area with a soil map unit that has CsB for a map symbol. What soil slope does B represent.

A. 0-2
B. 2-6
C. 6-12
D. 12 or greater

29. 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

30. The web soil survey list CsB soil for pond construction as

a. Good

b. Somewhat limited

C. Very limited