

## 2024 AREA V ENVIROTHON: SOILS

1. What is the A horizon known as?

- A. Topsoil
- B. Subsoil
- C. Parent material
- D. Bedrock

2. What is the term used to describe the process of converting organic waste into biogas and fertilizer through anaerobic decomposition?

- A. Biomimicry
- B. Pyrolysis
- C. Anaerobic digestion
- D. Fermentation

3. How can fertilizer affect the soil?

- A. It can change the PH
- B. Good for soil heath
- C. Replenishes NPK
- D. All of the above

4. What does lime do to the soil pH?

- A. Raises PH
- B. Lowers PH
- C. Neutralizes PH
- D. No change

5. What type of soil feels smooth when you rub it between your fingers?

- A. Clay
- B. Sand
- C. Silt
- D. Loam

6. Which of the following is an advantage of clay soil?

- A. Well drained
- B. Easy to work
- C. Holds the most nutrients
- D. Little pore space

7. Where do plants get their nutrients?

- A. Soil, fertilizer, plant food
- B. Roots
- C. Air
- D. Rain

8. (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

9. 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

10. 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

11. 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.

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. 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

16. 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

17. 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.

18. This Envirothon soil pit site is located in Camp Oyo with a soil map unit that has "SbD" for the map symbol. What soil does the symbol, SbD, represent?

- A. Shelocta silt loam, 3 to 8 percent slopes
- B. Shelocta-Brownsville association, very steep
- C. Skidmore silt loam, occasionally flooded
- D. Shelocta silt loam, 15 to 25 percent slopes

19. What is the R horizon known as?

- A. Humus layer
- B. Bedrock
- C. Subsoil
- D. Parent Material

20. What renewable energy source involves capturing and utilizing the methane produced by decaying organic matter in landfills for waste treatment facilities?

- A. Wind energy
- B. Biomass energy
- C. Geothermal energy
- D. Hydroelectric power

21. What nonrenewable resource can grass be turned into?

- A. Gas
- B. Oil
- C. Water
- D. Hot sauce
- E.

**Use Camp Oyo soil pit to answer the following questions:**

22. Looking at the soil pit, what is the structure of the soil in the pit between 10 to 20 inches?

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

23. The texture of various soil horizons is often the first and most important property to determine, for one can draw many conclusions from this information. What is the texture of the subsoil in the pit?

- A. Clay
- B. Clay Loam
- C. Silty Loam
- D. Silty Clay

24. Soil texture affects the ability of soil to hold and release nutrients. What is the texture of the topsoil in the pit?

- A. Clay
- B. Sandy Clay
- C. Loam
- D. Silt Loam

25. 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

## Answer Key

1. A
2. C
3. D
4. A
5. A
6. B
7. A
8. B
9. A
- 10.D
- 11.C
- 12.B
- 13.D
- 14.A
- 15.B
- 16.A
- 17.D
- 18.D
- 19.B
- 20.B
- 21.A
- 22.A
- 23.C
- 24.D
- 25.B