

2026 Area 1 Envirothon - Soil Test

Site-Specific Questions:

- 1) Slope measurements can be used to help determine Best Management Practices for a particular site and impact many of the soil interpretation ratings found in the Web Soil Survey. What is the slope of the area around the soil pit. Utilize the wood stakes to make this measurement.
 - a. **0 – 2%, nearly level**
 - b. 2 – 6%, gently sloping
 - c. 6 – 12%, sloping
 - d. 12 – 18%, steep

- 2) Landscape position influences soil properties and is an important factor in determining the best land use for a site. What landform is the soil pit located on?
 - a. Upland hillslope
 - b. Outwash plain
 - c. **Upland flat**
 - d. Floodplain

- 3) What is the USDA texture of the subsoil found in the soil pit? Utilize the soil provided in the bucket near the pit.
 - a. Clay
 - b. Silt loam
 - c. Sandy loam
 - d. **Clay loam**

- 4) Soil structure is the arrangement of primary soil particles into aggregates. What is the soil structure at a depth of 42 inches in the soil pit?
 - a. Blocky
 - b. **Massive**
 - c. Granular
 - d. Single grain

- 5) What is the depth of topsoil (inches) in the soil pit?
 - a. 0 – 4
 - b. 4 – 8
 - c. **8 – 12**
 - d. Greater than 12

- 6) Redoximorphic features (depletions and concentrations) are the result of soil saturation for extended periods of time and are therefore used to estimate the depth to a seasonal water table. At what depth (inches) do redoximorphic depletions consistently appear in the soil profile?
 - a. 0 – 8, poorly/very poorly drained
 - b. 8 – 16, somewhat poorly drained
 - c. **16 – 40, moderately well drained**
 - d. 40 – 60, well drained

- 7) Pesticides can migrate off the target location if applied improperly or to unsuitable sites. The ratings for Pesticide Leaching Potential are used for evaluating the potential of the soil to transmit pesticides through the profile and the likelihood of the contamination of groundwater. Which soil map unit on this site has a rating of "Somewhat limited"?
- Blo2B1
 - Wc
 - Pm
 - GIC2**
- 8) Healthy soils perform valuable ecosystem services. Understanding the role of organic matter in maintaining a healthy soil, as its foundation, is essential for developing ecologically sound agricultural practices. The ratings for Organic Matter Depletion indicate a soil's susceptibility to organic matter depletion. What is the rating listed for the Blo2A1 map unit?
- OM depletion moderately low
 - OM depletion moderate**
 - OM depletion moderately high
 - Not rated
- 9) Unsurfaced roads and trails are often utilized in forestry operations to transport felled trees. It's important to carefully plan these practices and prevent soil erosion, soil compaction, and water resource damage. Which soil map unit on this site has a rating of "Erosion hazard severe"?
- Bp
 - Pm
 - GIE2**
 - Blo2B1
- 10) PFAS chemicals ("forever chemicals") are a wide variety of manmade compounds that are highly persistent in the environment and generally do not degrade. The ratings for PFAS Attenuation in Soils indicate a soil's ability to immobilize PFAS. The higher the numerical value of a rating reason, the higher the predicted impact that property has on a soil's ability to perform this function. The Pm soil map unit on this site has a rating of "High attenuation", what rating reason was assigned the highest numerical value?
- Low active amorphous material content
 - Vadose zone effects: fluctuation, reduction, slope
 - Medium volume of soil
 - Organic matter content medium**

General Questions:

- 11) Soil particles are naturally bound together forming aggregates. What term defines an individual soil aggregate?
- Pedon
 - Ped**
 - Clump
 - Soil separates
- 12) Which of the following properties has the largest influence on soil texture?
- Time
 - Vegetation
 - pH
 - Parent material**
- 13) Which soil characteristic would be most important when selecting a site for pond construction?
- Permeability**
 - pH
 - Elevation
 - Cation exchange capacity
- 14) Which agricultural practice is most effective at reducing soil erosion?
- Ridge tillage
 - Conventional tillage
 - No till**
 - Minimum tillage
- 15) Which of the following soil nutrients is a cation?
- Sulfur
 - Chlorine
 - Molybdenum
 - Potassium**
- 16) Which of the following is not a soil texture class found on the soil textural triangle?
- Coarse**
 - Sandy clay loam
 - Clay
 - Loam
- 17) The 4R nutrient management strategy was developed to benefit both farmers and the environment. What are the four components of this management system?
- source, economics, environment, and time
 - source, rate, time, and place**
 - time, place, rate, and environment
 - time, environment, economy, and place

- 18) Much of southeast Ohio was not impacted by historic glacial activity. Due to this, soil in southeast Ohio is generally _____ than the glaciated areas of northwest Ohio.
- Less acidic
 - Younger
 - The same age
 - Older**
- 19) A fragipan is a loamy, brittle subsurface horizon low in porosity that restricts plant rooting depth. Which horizon designation indicates the presence of a fragipan in the subsoil?
- Bg
 - Bx**
 - Bw
 - Bt
- 20) The topsoil in Ohio is typically dark brown. What is most responsible for this color?
- Nitrogen
 - Iron
 - Manganese
 - Organic matter**
- 21) Soil color is described using the Munsell classification system. What component of the color 10YR 4/3 is the chroma?
- 10
 - YR
 - 4
 - 3**
- 22) Which of the following nutrients are the most mobile in soil?
- Phosphorus
 - Nitrogen**
 - Potassium
 - Calcium
- 23) Which of the following statements best describes infiltration?
- Downward movement of water between soil horizons
 - Downward movement of water into the soil surface**
 - Lateral movement of water throughout a soil horizon
 - Deep movement of water into an aquifer
- 24) Which landscape position would be expected to have a convex slope?
- Shoulder**
 - Backslope
 - Footslope
 - Toeslope

- 25) Which parent material listed below typically produces the youngest soil?
- Glacial till
 - Colluvium
 - Residuum
 - Alluvium**
- 26) What term is used to describe soil that exists in wetlands?
- Hydrophobic
 - Hydric**
 - Subaqueous
 - Aridic
- 27) Which microorganism is most responsible for the “earthy” smell of soil?
- Protozoa
 - Bacteria
 - Actinomycetes**
 - Algae
- 28) Legumes form a symbiotic relationship with bacteria that provides them with what important nutrient?
- Oxygen
 - Carbon
 - Nitrogen**
 - Sulfur
- 29) Soil taxonomy is comprised of six different levels. The highest level consists of twelve categories. What is the name of this level?
- Order**
 - Family
 - Series
 - Kingdom
- 30) What level of soil taxonomy is the most specific?
- Order
 - Series**
 - Species
 - Family
- 31) Glacial till is a common parent material in western and northern Ohio. Which statement best describes glacial till?
- Unsorted material deposited by rivers that formed under glaciers
 - Stratified layers of sand and gravel deposited by glacial meltwater
 - Unsorted, non-stratified material consisting of clay, silt, sand and boulders deposited by glacial ice.**
 - Material deposited by wind following retreat of the glaciers

- 32) Frozen water found in the soil is known as:
- a. Soil moisture
 - b. Glaciers
 - c. Permafrost**
 - d. Atmospheric moisture
- 33) Land use changes from permeable to impermeable cover presents what issue in the watershed?
- a. A sharp increase in streamflow after a precipitation event**
 - b. Rapid infiltration of the flow
 - c. Flow changes in direction
 - d. Less occurrences of flooding
- 34) The carbon containing compounds in the soil can be washed into bodies of water through _____ . This water eventually enters the ocean.
- a. Runoff
 - b. Leaching**
 - c. Weathering
 - d. Uplifting
- 35) Why is it important to protect flood plains in the watershed?
- a. They provide grazing in the watershed
 - b. They are a good place to build houses
 - c. They slow water flow during heavy rain events and reduce flooding**
 - d. They are a good place to store pollutants beside the stream