AREA 2

2017 Envirothon Questions for **Soils** Station
May 3, 2017 (Questions 1 from 4 are Site Specific)

(Site specific)

1. Designate the beginning depth of the hard dense horizon.
   A. Between 0 and 10 inches
   B. Between 10 and 20 inches
   C. Between 20 and 30 inches
   D. Between 30 and 40 inches
   E. Below 40 inches

No answer on key.

(Site Specific)

2. Choose the soil texture for the material between 18 and 22 inches.
   A. Loam
   B. Silt loam
   C. Silty clay loam
   D. Silty clay

(Site Specific)

3. Using the Munsell Color book determine the most appropriate color for the topsoil.
   A. 10YR 4/3
   B. 10YR 5/6
   C. 5YR 4/6
   D. 5YR 5/8

(Site Specific)

4. Determine the structure for the horizon directly below the Ap horizon.
   A. Blocky
   B. Granular
   C. Platy
   D. Prismatic

5. The topsoil of soils in wetter areas is usually darker than that of soils located on drier landscapes. From the choices below select the best reason why this occurs.
   A. Waste products from animals that prefer the wetter environment
   B. Plants in wetter environments have darker leaves (more chlorophyll)
   C. Organic acids in the groundwater
   D. Plant remains in wetter environments do not oxidize as quickly

6. One of the five factors of soil formation is type of geologic parent material. With this in mind complete this statement concerning soil types. The soil…
   A. Cannot form in some very rocky parent materials.
   B. Can form in more than one kind of parent material
   C. Only forms in glacial material in this county
   D. Forms from an altered soil profile

7. Biological life present during soil formation influences soil acidity. Choose the situation that would result in the most acidic soil.
   A. Soils formed in a forest environment
   B. Soils formed in a grassland environment
   C. Soils formed in a lethargic forest environment
   D. Soils formed in a lethargic grassland environment

8. Soil texture is the most important soil characteristics affecting the transmission of atmospheric gasses within the soil. From the list below choose the next most important soil characteristic affecting these processes.
   A. Soil consistence
   B. Soil color
   C. Soil pH
   D. Soil structure

9. Soil structure is a result of soil formation. Better structure aids water movement and root growth. Choose the soils that would have the best structure.
   A. Young soils on ridge tops
   B. Older more developed soils on gentle side slopes
   C. All soils have basically the same structure
   D. Wet soils on flood plains

10. Ideally a sample of soil should be about 50% pore space, 5% organic matter, and 45% mineral matter. The mineral portion of the soil is made up of
   A. Crystalline structures, salts, and iron oxides
   B. Sand, silt, and clay sized particles
   C. Very small rock fragments such as quartz and feldspar
   D. Fertilizer, lime, and other soil amendments

11. Select the term for the chemical and physical soil forming actions that break down the larger sized soil particles into smaller ones.
   A. Topographical sequencing
   B. Weathering processes
   C. Reduction/ oxidation reactions
   D. Micro-biochemical reactions

12. Rain water running off of unprotected soil surfaces carries away soil particles, organic matter, and plant nutrients. What type of pollution is this an example of?
   A. Point source pollution
   B. Water source pollution
   C. Non-point source pollution
   D. Sediment source pollution

13. Site selection using soil characteristic criteria is very important when making land use decisions. Flood plain soils should not be selected for…
   A. Farmstead out buildings
   B. Cropland farming
   C. Hay land farming
   D. Reforestation projects

14. Because of the effects of the five soil forming factors, soils are naturally variable within short distances across the landscape. With this in mind, identify the most correct statement concerning selection of a home site in this county.

A. The county soil survey has all the information needed when making this type of decision.
B. Because these factors only properties with good soils are sold for home site development to limit errors when making this type of decision.
C. Most site limitations can be overcome with inexpensive engineering practices making this type of decision less stressful.
D. An onsite investigation by a certified soil scientist is the best way to get site specific information when making this type of decision.

15. Soil characteristics resulting from parent material type affect the soils ability to transmit and store plant water. What is the soil property listed in the soil survey that rates soils for this property?

A. Water moistened bulk density
B. Soil water permeability
C. Available water capacity
D. Soil reaction percentage

16. Soil texture is an important soil characteristic determining soil permeability. Choose the texture that would have the most restrictive permeability rating.

A. Silty clay
B. Silty clay loam
C. Clay loam
D. Sandy clay loam

17. Even though soil color has little influence on soil behavior except the ability to warm, soil colors are important indicators of certain soil properties. Soil colors caused by redoximorphic features, often mistakenly called mottles, are an indication of

A. Soil wetness
B. Soil clay content
C. Soil organic matter content
D. Percentage of gravel in the soil

18. Farming practices that destroy soil structure promote less healthy soil. Choose the end product of such practices.

A. Increased organic matter content
B. Increased soil acidity
C. Increased soil compaction
D. Increased clay content

19. The natural characteristics of soils within cities are often modified by construction activities. Choose the modified soil characteristic that will negatively affect tree growth.

A. The regrouping of soil oxides
B. The chemical weathering of excavated parent material
C. The transportation of soil material in run off sediments
D. The changes in soil structure

20. Soils are grouped using the Ordination System (an example is 5W). The first symbol is the class designator denoting production of wood growth. The second part of the symbol, the subclass, indicates:
    A. A rating of predominate tree species
    B. The quality of understory plants
    C. Physiographic characteristics that limit tree growth
    D. The major soil limitation

21. Animal species naturally select to specific environments. Complete the statement. Animals that favor very moist conditions would live in or near....
    A. Soils with very low seasonal water tables
    B. Soils with low seasonal water tables
    C. Soils with moderate seasonal water tables
    D. Soils with high seasonal water tables

22. Animals choose locations with plants meeting their dietary requirements. These plants naturally select to specific soil types. Choose the soil most likely found in landscapes populated by wetness tolerant plants.
    A. Venant soils
    B. Hydric soils
    C. Encompassed soils
    D. Aridic soils

23. Wildlife populations that favored wetland environments declined as these areas where tile drained and crop farmed. What would happen to the soil if these drainage practices where eliminated?
    A. Natural internal soil drainage would again take place
    B. Nothing would change because the effects of farm tile drainage cannot be reversed
    C. Soil erosion would increase because wetness would inhibit plant growth
    D. Organic matter percentages in the topsoil would decline

USE WEB SOIL SURVEY TO ANSWER QUESTIONS 24 THRU 30

24. The soil map on page 6 has the soil pit location marked. Choose the map unit symbol and map unit name at the soil pit location.
    A. BtA Bogart loam, 0 to 2 percent slopes
    B. Or Orrville silt loam
    C. RsB Rittman silt loam, 2 to 6 percent slopes
    D. WaA Wadsworth silt loam, 0 to 2 percent slopes

25. Soil maps have soil delineations shown as areas detailed within lines on the aerial photograph. Some of these map units are made up of two or more major soils or miscellaneous areas. Choose the name that does not represent such delineations.
    A. A complex
    B. An association
    C. An undifferentiated group
    D. A conassociation

26. Soils are mapped according to landforms. Using the appropriate map unit description, select the landform for the map unit the soil pit is in.
    A. Flood plain
    B. Lake plain
    C. Outwash plain
    D. Till plain

27. Pesticide runoff from farm land is a major concern of agricultural managers. Using the information on pesticide runoff beginning on page 28 and the table on page 31, select the rating for runoff potential for the soil map unit the soil pit is in.
    A. Not limited
    B. Somewhat limited
    C. Limited
    D. Very limited

28. Manure management has become very news worthy due to algae concerns in Lake Erie. Using the information on manure and food processing waste beginning on page 32 and the table on page 36, select the rating for manure for the soil map unit the soil pit is in.
    A. Not limited
    B. Somewhat limited
    C. Limited
    D. Very limited

29. Horizons that are considered restrictive assume lateral underground water movement. Using the appropriate map unit description, select the depth to restrictive feature for the map unit the pit is in.
    A. More than 80 inches
    B. 18 to 36 inches
    C. 12 to 24 inches
    D. Not rated

30. Web Soil Survey contains information relating to the soils mapped in the named county. Select the term used for specific use and management groupings assigned to soil areas with similar behavior or specified practices.

A. Geologic classifications
B. Historic classifications
C. Land classifications
D. Soil classifications