

TEAM NAME _____

SOILS QUESTIONS *ENVIROTHON 2007* SCORE: _____

Total exam points (100)

Points this page (22)

- **Use the Langelde County Soil Survey for the following four questions.**
1. What is the name of the features found in NW corner of section 33, T31N—R12E? St Peter's Church and Cemetery (2pts)
 2. What is the soil symbol and full name of the soil map unit that contains most of the City of Antigo Waste Water Treatment Plant?
AoA (symbol) Antigo silt loam (map unit) (2pts)
 3. What is the drainage class of the Magnor Soil? (circle best answer) (4pts)
 - a. well drained
 - b. moderately well drained
 - c. somewhat poorly drained
 4. Using the General Soil Map, what is the name of the light yellow soil association (Group 8)?
Antigo - Pence (4pts)
 5. You need soils information for Section 10, T. 32 N., R. 12 E. What is the number of the soil survey sheet you will need? 32
- **The following questions are general knowledge questions.**
6. A horizon where illuvial clay accumulates is known as what? (4pts)
 - a. Bg horizon
 - b. Bs horizon
 - c. Bt horizon
 - d. Bk horizon
 7. What three conditions are necessary to identify a wetland? (6pts)
wetland hydrology hydrophytic vegetation hydric soil

8. Which factor is the most significant in the development of hydric soils? (3pts)

- a. parent material originally limestone
- b. an excess of microbial activity
- c. lack of oxygen from water saturation
- d. rapid decomposition of organic matter

9. What is the percent slope of a field that has a change in elevation of 47 feet and is 420 feet long? (3pts)

% slope = 11 (rounded to nearest whole number)

10. Earthworm burrowing improves infiltration? **T F** (2pts)

11. Which major nutrient, contained in runoff water, is associated with lake eutrophication? (3pts)

Nitrogen or Phosphorus or Potassium

12. What two effects does soil compaction have on water running down a steep hill in a field? (3pts)

It increases runoff

It decreases infiltration

13. Five major factors largely influence the kinds of soil that develop in the world. What are the five factors? (10pts)

1. time

2. climate

3. organisms

4. parent material

5. topography or landscape position or relief

* **Visit the soil pit to answer the following questions. Points this page (26)**

14. The soil in the pit would be considered a _____ soil. (2pts)
- a. poorly drained
 - b. well drained
 - c. **excessively drained**
15. What is the moist color of the sample in container 4? ___ **10YR 5/4** ___ (2pts)
16. What is the symbol used to notate the top horizon in the soil pit? (2pts)
- a. A horizon
 - b. B horizon
 - c. **Ap horizon**
 - d. C horizon
17. What is the structure of the lower horizon in the soil pit? (2pts)
- a. Prismatic
 - b. **Loose**
 - c. Sub-angular blocky
 - d. Massive

* **Use the samples in the containers to answer the next series of questions.**

18. What is the soil texture in container 1? (circle one) (3pts)
- sand sandy loam **loam** silt loam clay
19. What is the soil texture in container 2? (circle one) (3pts)
- sand sandy loam loam **silt loam** clay
20. What is the soil texture in container 3? (circle one) (3pts)
- sand** sandy loam loam silt loam clay
21. What three particle size fractions make up the mineral part of a soil? (6 pts)
- (Hint: What we can touch)*
- ___ **sand** ___ ___ **silt** ___ ___ **clay** ___
22. Soil pH affects the availability of nutrients to plants and crops? **T** F (3pts)

Points this page (20)

23. What is the symbol used to notate the top horizon or layer in a plowed field?
Ap (2pts)
24. Using the shaded relief map identify the landforms associated with the letter.
(3pts)
- A. esker
 - B. drumlin
 - C. stream terrace
25. Sand, silt and clay content is estimated in the field and then placed within the textural triangle to determine texture class. (3pts)
26. The naturally occurring arrangement of soil particles into aggregates that result from pedogenic processes is called soil structure. (3pts)
27. What would most likely be the cause of rills and exposed areas of subsoil?
water erosion. (2pts)
28. The primary cause (s) of accelerated erosion is: (2pts)
- a. Tillage
 - b. Grazing
 - c. Cutting timber
 - d. All of the above
29. Soils high in organic matter have good engineering properties. T or F (2pts)
30. What is the parent material in the tray? (3pts)
- a. loess
 - b. till
 - c. outwash
 - d. organic sediments

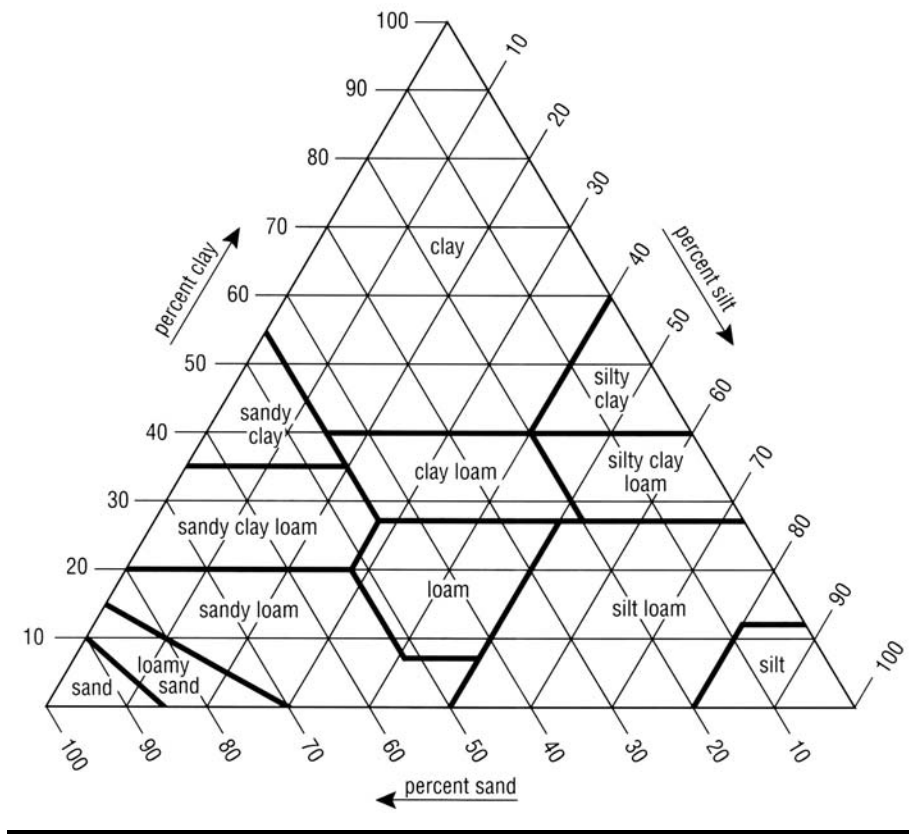
Points this page (9)

31. Using the texture triangle, identify the texture of the three soils based on their relative proportions of clay, sand, and silt. (6pts)

a. 37% clay, 23% silt, and 40% sand clay loam

b. 50% clay, 45% silt, and 5% sand silty clay

c. 10% clay, 5% silt, and 85% sand loamy sand



Tie Breaker:

(3pts)

The water table that lies above an unsaturated zone is called a perched water table.