

2 points per question, except for questions 21 & 42

Use the Portage County Soil Survey for this section

1. You need soils information for Section 20, T. 24 N., R. 10 E. What is the number of the soil survey sheet you will need? **27**
2. In the SW1/4 SW ¼ of Section 20, what is the major soil type? ***Wyocena sandy loam***
3. What is the parent material associated with mapunit DoA? ***residuum from igneous rock. Ok if they add silty material, or loess, over residuum***
4. What are the degree and kind of limitations for septic tank absorption fields for mapunit DoA?
Severe: somewhat poorly drained, slow permeability
5. Generally, the greater the bulk density, the less pore space for water movement, root growth and penetration, and seedling germination? **T* F**
6. Soil acidification can also be an indication of excessive N fertilizer? **T* F**
7. Soil stability serves as an indicator of soil biological activity and nutrient cycling? **T* F**
8. Earthworm burrowing improves infiltration? **T* F**
9. Earthworm populations are often greater under conventional tillage than under no-till? **T F***
10. Change in topsoil thickness is usually the result of wind erosion or water erosion? **T* F**
11. Shrinking and swelling of soils causes damage to building foundations? **T* F**
12. Shrinking and swelling is dependent on the amount of silt in the soil? **T F***
13. Soil infiltration rate is dependent on the soil type; soil structure, or amount of aggregation; and the soil water content? **T* F**
14. Soil pH affects the availability of nutrients to plants or crops? **T* F**

15. Compacted soil layers increase runoff? **T* or F**

16. Major nutrient in runoff water associated with eutrophication in lakes? **phosphorus**

17. An increase in the amount of impervious surface area (roofs and streets) will increase the amount of runoff? **T* F**

18. In general, pH values between 3 and 5.5 are optimum for crop growth. **T F***

19. Natural drainage class refers to the frequency and duration of wet periods under conditions similar to those under which the soil developed. **T* or F**

20. Using the shaded relief map identify the landforms associated with the letter. **4pts**

- A. _____ **drumlin**
- B. _____ **end moraine**
- C. _____ **lake basin**
- D. _____ **outwash plain**

21. If you were a land use planner and were interested in preserving the best agricultural land would you want to preserve soils in Capability Class I or Class VIII? **Class I**

22. Permeability and Available Water Capacity are important soil properties to consider if you were interested in infiltrating storm water from construction sites? **T F* only permeability**

23. Soils with a 20 inch Oa surface horizon are generally good building sites? **T F***

24. Slope aspect is the compass direction (in degrees) that a slope faces, looking upslope? **T F* looking downslope**

25. What would the % slope be if the change in elevation was 20 feet in a distance of 250 feet? **8**

26. _____ features are used to estimate the depth to water table if free standing water is not present. **Redoximorphic**

27. A water table that lies above an unsaturated zone is called _____. **Perched**

28. Standing water in a closed depression on top of the soil is called _____. **Ponded**

29. The kind of unconsolidated material from which the soil is derived is called _____. **Parent material**
30. Sheet erosion refers to “even soil loss, no channels?” **T* F**
31. Rill erosion refers to “small, runoff channels that can be obliterated by conventional tillage?” **T* F**
32. Name a diagnostic surface and subsurface horizon you would find in a Typic Argiudoll.
 _____ & _____ **mollic & argillic**
33. Soil Master Horizons include A, B, C, and D horizons? **T F***
34. The suffix *t* with a B horizon means _____. **Accumulation of clay**
35. The suffix *g* with a B horizon means _____. **Strong gley, or wetness**
36. Soil Texture is the numerical proportion (by weight) of sand, silt, and clay in a soil. **T* F**
37. Soil Texture includes both the fine earth fraction (<2mm) and rock fragments (>2mm)? **T F***
only <2mm fraction
38. Sand, silt, and clay content is estimated in the field and then placed within the _____
 _____ to determine Texture Class. **Textural Triangle**
39. The naturally occurring arrangement of soil particles into aggregates that results from pedogenic processes is called _____. **Soil Structure**
40. _____ is the resistance of soil to rupture under an applied stress. **Consistence**
41. Why is this area around Sunset Lake hilly? **6pts**
Because the soil material was deposited on stagnant ice, which eventually melted.

42. Soil Monoliths: Name the Soil Order (*can use soil survey*)

a. Markey _____ *Histosol*

b. Dolph _____ *Alfisol*

43. Name the Subgroup.

c. Altdorf _____ *Aeric Glossaqualf*

d. Billett _____ *Mollic Hapludalf*

44. List the redoximorphic features you see in Altdorf. _____ & _____
concentrations & depletions

45. What is the structure of the E and E/B horizons in Dolph? *Platy*

46. What is the structure of the Ap horizon in Billett? *Granular*