

Final Exam
Continuing Education Course #223
Soil Permeability Testing

1. The Natural Resource Conservation Service web soil survey is a good source for published soils information?
☐ a. True.
☐ b. False.
2. The New York Department of Health finds which of the following areas unacceptable for on-site septic systems?
☐ a. Areas lower than the 10 year flood level.
☐ b. Areas with slopes greater than 15%.
☐ c. Both of the above areas.
☐ d. Neither of the above areas.
3. What is the classification of a soil that is 70% sand, 15% silt, and 15% clay?
☐ a. Clay.
☐ b. Sandy clay.
☐ c. Sandy loam.
☐ d. Silty loam.
4. What is the permeability of the material described in question #3?
☐ a. K0.
☐ b. K1.
☐ c. K2.
☐ d. K3.
☐ e. K4.
5. A soil log dug with a backhoe can be useful for which of the following?
☐ a. To record the different layers of the soil encountered according to texture, color, rock content, etc.
☐ b. To determine the presence or absence of groundwater.
☐ c. To determine the depth of bedrock.
☐ d. To provide access to a soil level or levels, which can be used for in-situ permeability testing or from which samples can be taken for laboratory tests.
☐ e. All of the above.
6. What is the basis used to describe soil colors?
☐ a. Rule of thumb.
☐ b. A comparison with reference materials.
☐ c. The Munsell Color Chart.
☐ d. It varies from region to region.
7. Sand particles are how large?
☐ a. Between 0.05 and 2.0 millimeters.
☐ b. Between 0.02 and 0.05 millimeters.

- ☐ c. Less than 0.002 millimeters.
 - ☐ d. Greater than 2.0 millimeters
8. Gravel refers to coarse fragments that are how large?
- ☐ a. Between 0.1 inch and 3 inches.
 - ☐ b. Between 3 inches and 10 inches.
 - ☐ c. Greater than 10 inches.
9. The structure of a soil refers to the ease with which a soil clod can be crushed with the fingers.
- ☐ a. True.
 - ☐ b. False.
10. Soil structure is classified as platy when the soil consists of loose individual sand grains.
- ☐ a. True.
 - ☐ b. False.
11. What does soil consistency refer to?
- ☐ a. The relative amounts of sand, silt, & clay in the soil.
 - ☐ b. The ease with which a soil clod can be crushed with the fingers.
 - ☐ c. The amount of coarse fragments in a soil sample.
 - ☐ d. Whether the soil sample is moist or dry.
12. In wet soil, "friable" refers to what?
- ☐ a. The soil is non-coherent.
 - ☐ b. The soil crushes easily between the thumb and forefinger.
 - ☐ c. The soil material is barely crushable under strong pressure between the thumb and forefinger.
13. What is the most obvious sign of groundwater in a soil log?
- ☐ a. Seepage.
 - ☐ b. Mottling.
 - ☐ c. The presence of roots.
 - ☐ d. The absence of roots.
14. Mottling in soil log refers to what?
- ☐ a. Colors left over by water.
 - ☐ b. Seepage.
 - ☐ c. Coarse fragments.
 - ☐ d. None of the above.
15. What type of test is suitable for identification of a massive rock substratum above the water table?
- ☐ a. Tube permeameter test.
 - ☐ b. Soil class rating analysis.
 - ☐ c. Basin flood test.
 - ☐ d. Pit-bailing test.
16. Which of the following is not an in-situ soil test.
- ☐ a. A percolation test.
 - ☐ b. A basin flood test.
 - ☐ c. A pit-bail test.
 - ☐ d. A soil class rating analysis.
17. When pre-soaking for a perc test in sandy soil the hole should be filled to what depth?

- ☐ a. 6".
- ☐ b. 12".
- ☐ c. 18".
- ☐ d. 24".

18. If the result of the perc tests is less than 3 minutes per inch, what is the soil horizon being tested considered?

- ☐ a. Hydraulically restrictive.
- ☐ b. Clay.
- ☐ c. Excessively coarse.
- ☐ d. Sandy clay.

19. The New York Department of Health requires how many percolation tests at the site of a proposed sewage system.

- ☐ a. One.
- ☐ b. Two.
- ☐ c. Three.
- ☐ d. Four.

20. The NJDEP considers a basin flood test a failure if what occurs.

- ☐ a. The basin does not drain within 24 hours.
- ☐ b. The resulting perc rate is less than 3 minutes per inch.
- ☐ c. The material is excessively coarse.

21. When groundwater is present within a test hole, a pit bailing test is useful.

- ☐ a. True.
- ☐ b. False.

22. Neither a pit-bailing test nor a basin flood test will be appropriate in which of the following conditions.

- ☐ a. If there is no groundwater encountered in the test hole.
- ☐ b. If ample groundwater is encountered and the test hole fills up quickly.
- ☐ c. If the investigator is below the level of the groundwater but there is insufficient seepage into the hole to fill it to a depth of more than 12".

23. How much soil must be collected to perform a soil class rating analysis?

- ☐ a. 200 grams.
- ☐ b. 40 grams.
- ☐ c. 80 grams.
- ☐ d. 100 grams.

24. The results of a soil class rating analysis indicate that the soil being tested has a permeability K2. However, the remaining sand totals 22.0 grams and 15.5 grams of this sand is classified (by sieve analysis) as fine to very fine. What is the resulting permeability of the soil sample?

- ☐ a. K0.
- ☐ b. K1.
- ☐ c. K2.
- ☐ d. K3.

25. In many ways a tube permeameter test is simpler than a soil class rating analysis.

- ☐ a. True.
- ☐ b. False.