READING GUIDE*

Pedology

see Buol et al. (2011), Chapter 1, p. 3-7, 12-16, 17-21, 29-34

OBJECTIVE: *To understand the basic principles of soil genesis and classification, and the role of pedology in guiding proper soil use and management.*

Pedology

1. What are the three conceptual views of soil associated with the study of soil genesis? **How might each of these perspectives on soil influence our understanding of the use and management of soils?**
2. What is *soil classification*? What is the purpose of classifying soils?
3. What is *soil morphology*?
4. What is *soil characterization*? How is it used to aid soil classification?
5. **What is *geomorphology*?**

Soil Genesis

6. What is the *geologic uniformitarian principle*? **How can this principle be used to further our understanding of the formation of soils we observe today?**
7. For a given soil, are current conditions (and associated soil forming processes) necessarily the same conditions under which the observed soil properties developed? **Explain your answer.**
8. What are the five factors that most significantly influence soil forming processes?
9. What type of mineral is readily formed in soil environments? **Why is this mineral important?**
10. Why are accurate description of soil profiles needed to properly study soils and landscapes?
11. **Why are energy exchanges (within soil or between soil and the environment) important relative to soil genesis? Relative to soil use and management?**
12. What are some common processes that occur within soil horizons and soil profiles that lead to the development of these horizons and profiles? What environmental factors drive these processes?
13. **What is the difference between a *transformation* and a *translocation*?**
14. What is the difference between steady state and equilibrium? Which is more common in soil systems? What is an example of a soil system not in steady state?

Soil Classification

15. Define *taxon*, *taxa*, *differentiating characteristic*, *multicategorical system*, and *taxonomy*.
16. Why do we classify soils (or any other object, for that matter)?
17. What is the difference between a “technical classification system” and a “natural classification system”?

Soil Morphology

18. Define *soil profile*, *solum*, *control section*, *pedon*, *soil individual*, and *soil map unit*.
19. In most cases, to what depth must soil profile morphology be described in order to adequately classify a soil?
20. What is the significance of the control section (i.e., why is it used for the purposes of soil classification)?

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* *Questions in plain type represent basic facts and concepts. Questions in **bold** type are those that are answered in the text but require more careful consideration. The Synthesis questions at the end help you apply the facts and concepts to a relevant issue.*

21. What is the importance of the concept of a pedon, particularly as related to an understanding of soil genesis and soil use and management?
22. What are *soil interpretations*? **How do concepts of soil genesis and soil classification influence soil interpretations?**

Soil Survey

23. What is *soil survey*?
24. **How is soil survey influence by concepts of soil genesis and classification? How are concepts of soil genesis and classification influence by soil survey?**
25. Why does soil survey continue to be relevant?

SYNTHESIS:

26. Which soil forming factors and soil forming processes are likely to have the greatest influence on soil genesis in West Virginia? Explain your answer.
27. How does knowledge of the factors and process of soil formation help us understand the effects of human activities on soils and soil management?