

SOIL 557 – Advanced Soil Genesis  
Example Mid-Term Exam

*Answer any 4 of the 5 questions below. The exam is closed book and there is a time limit of 1.5 hours. Each answer should be concise, well organized, and no more than 1/2 page in length.*

1. Briefly describe how some of the soil orders might fit into a time/developmental sequence, such as that presented by Birkeland. Parent material would represent one end of the sequence (no soil development, time = 0), with Oxisols representing the other. Assume a well-drained site with humid climate and forest vegetation.
2. When introduced in 1975, Soil Taxonomy represented a significant change in soil classification in the US. What are some of the important, fundamental differences between Soil Taxonomy and previous systems that were used? Give examples as needed to support your answer.
3. Explain how biological activity associated with soils is related to podzolization, gleization, melanization, and calcification/decalcification. Be specific with each process.
4. Consider Mollisols, Entisols, Alfisols, Andisols, and Spodosols. Given the characteristics of each as defined in Soil Taxonomy, construct a simple classification key that could be used to separate these 5 soil orders into mutually exclusive classes.
5. Soil Taxonomy utilizes combinations of chemical, physical, mineralogical, and morphological characteristics as the basis for classifying soils. What are the advantages and disadvantages of this approach? Give specific examples as needed to support your answer.