

## **GKD 350 – Study Guide for Midterm #2**

What is the difference between spatial and temporal variability in an agricultural field.

Draw soil profiles with horizons showing the influence of climate on soil development  
When conducting land suitability assessment in the field, what are the two soil physical properties you consider as most important? Why?

Why do soils differ from one place to the other?

What remote sensing data would you use in the process of conducting soil survey?

You are given a field of 500 ha to conduct land suitability assessment. What would be the best guide on where to open soil profiles in this field?

Explain this soil forms, Glenora, Hutton, Clovelley, Estcourt, Etosha, Griffin. NB: You will have to know the diagnostic A and B before giving explanations. You can use subscripts to explain the B horizons also.

To check if the soils are not salt affected soils? What are the maximum values of those parameters that will lead you to conclude that the soils are salt affected or not. Please indicate soil parameters, values and units.

What is the difference between GPS and DGPS? Which one would you use for soil survey and why?

How do GPS communicate with satellites?

How far are the satellites away from the earth surface?

Given diagnostic B horizons (South Africa Soil Classification System), would you be able explain how you can identify them in the field during soil classification. Just give one sentence for each. i.e. Softplinthic B. **Hint:** Know the physical (not chemical) identifying characteristics of some diagnostic B horizon in South African Soil Classification system.

### **USDA Soil Taxonomy**

Compare and contrast differences among soils using their taxonomic classification.

Identify the criteria that differentiate the orders of USDA Soil Taxonomy

Explain each of the key soil orders in one sentence.

Rank soil orders according to their degree of weathering.

Draw soil profiles for given soil orders.

Give the temperature regime under which you can find each of the soil orders.

Fill in the missing words Questions about practical handout on USDA soil taxonomy. OR Match Column A with Column B on questions about Soil Taxonomy – Soil order.

Explain Epipedons or Subsurface horizons – USDA Taxonomy

Understanding soil subscripts. There will be questions on soil subscripts. i.e. Bt, Bo, Bw in relation to USDA soil taxonomy – Subsurface epipedons.