



<b>FACULTY</b>	<b>FACULTY OF AGRICULTURE, ENGINEERING AND NATURAL SCIENCES</b>		
<b>DEPARTMENT</b>	<b>ENVIRONMENTAL SCIENCE</b>		
<b>SUBJECT</b>	<b>PEDOLOGY</b>		
<b>SUBJECT CODE</b>	<b>GHE 3662</b>		
<b>DATE</b>	<b>November 2022</b>		
<b>DURATION</b>	<b>2 Hours</b>	<b>MARKS</b>	<b>70</b>

**SPECIAL / SUPPLEMENTARY EXAMINATION**

**Examiner:** Dr R. N. Shikangalah, University of Namibia  
**Internal Moderator:** Ms N. F. Nakanyete, University of Namibia  
**External Moderator:** Prof. M.D. Simatele, University of Witwatersrand

**INSTRUCTIONS**

1. Present your work as neatly as possible.
2. This paper consists of 2 pages; **including** this cover page.
3. **Answer all the questions.**
4. Use your Examination Answer Book for all the notes you are taking during your examination.

1. What is soil? 1
2. List any five soil suborders of the following soil orders:
  - a. Alfisols. 5
  - b. Ultisols. 5
3. Define the following terms:
  - a. Epipedon. 2
  - b. Denitrification. 2
4. Describe five factors that promote the losses of organic matter. 10
5. Explain the Carbon cycle. 10
6. Acid deposition from the atmosphere affects the soil in watersheds. Explain how to make improve the situation. 10
7. Discuss the ecological solutions needed for managing nitrogen nutrients in the following landscapes:
  - a. Adjusting solubility/availability of in-field soil nutrient pools. 6
  - b. Controlling nutrient input to watershed/agroecosystem/ farm. 4
8. There are five factors affecting wind erosion. These are also indicated in the prediction equation  $E = f(I \times C \times K \times L \times V)$ .
  - a. State the five factors involved in the equation (in the brackets). 5
  - b. Explain how each above-mentioned factor influences wind erosion. 10

**TOTAL MARKS: 70**