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**UNIVERSITY OF SWAZILAND**

**FINAL EXAMINATION PAPER**

**PROGRAMME: DIPLOMA IN AGRICULTURE YEAR 3 AND  
DIPLOMA IN AGRICULTURAL EDUCATION  
YEAR 3**

**COUSE CODE: CP 304**

**TITLE OF PAPER: PEDOLOGY**

**TIME ALLOWED: TWO (2) HOURS**

**INSTRUCTIONS: ANSWER ANY FOUR (4) QUESTIONS.**

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CHIEF INVIGLATOR**

**QUESTION 1**

(a) Define or give short descriptions of the following terms and phrases:

- (i) Soil structure [5]
- (ii) Horizon [5]
- (iii) Eluviation [5]

[15]

(b) Briefly discuss the following soil forming factors.

- (i) Climate [5]
- (ii) Organisms [5]

[10]

[25]

**QUESTION 2**

Discuss the following pedogenic processes:

- (i) Calcification [5]
- (ii) Gleying [5]
- (iii) Alkalization [5]
- (iv) Rubefaction [5]
- (v) Salinization [5]

[25]

**QUESTION 3**

Briefly discuss the similarities and dissimilarities between the following pairs of Soil Orders:

- (i) Alfisols and Ultisols [5]
- (ii) Entisols and Inceptisols [5]
- (iii) Alfisols and Aridisols [5]
- (iv) Mollisols and Spodosols [5]
- (v) Histisols and Oxisols [5]

[25]

**QUESTION 4**

- (a) List four [4] of the six categorical levels of the United States Comprehensive Soil Classification System and briefly indicate their nature of differentiating characteristics.

[20]

- (b) List the five [5] reasons why it is important to have a soil classification system, or explain why it is important to classify things.

[5]

[25]

**QUESTION 5**

- (a) Discuss the differences between drainage Mottles and matrix mottles in terms of morphology, genesis and utilization.

[10]

- (b) Discuss the contrasts and comparisons between the following processes.

- (i) Physical weathering and chemical weathering. [5]  
(ii) Eluviation and illuviation [5]

[10]

- (c) List any five [5] of the six [6] soil temperature regimes or categories.

[5]

[25]