



**2<sup>ND</sup> SEMESTER : 2013/2014**

**PAGE 1 OF 3**

**UNIVERSITY OF SWAZILAND**

**FINAL EXAMINATION PAPER**

**PROGRAMME : B.Sc. DEGREE IN AGRONOMY YEAR III**

**COURSE CODE: CP 308**

**TITLE OF PAPER: SOIL PEDOLOGY**

**TIME ALLOWED: TWO [2] HOURS**

**INSTRUCTIONS: ANSWER ANY FOUR [4] QUESTIONS.**

**NOTE: THE PAPER CONTAINS THREE [3] PAGES INCLUDING THE COVER PAGE.**

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**QUESTION 1**

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

- (i) Soil [3]
- (ii) Horizon [3]
- (iii) Illuviation [3]
- (iv) Edaphology [3]
- (v) Soil Pedology [3]

(b) Briefly discuss the following soil forming factors.

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

[25]

**QUESTION 2**

Discuss the following pedogenic processes:

- (i) Calcification [5]
- (ii) Ferrallitization [5]
- (iii) Alkalization [5]
- (iv) Rubefaction [5]
- (v) Pedoturbation [5]

[25]

**QUESTION 3**

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

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

[25]

**QUESTION 4**

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

[20]

- (b) Discuss 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) Differentiate or distinguish the following processes:

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

- (b) Name and describe any three [3] diagnostic organic materials used in Soil Taxonomy for classifying soils.

[15]

[25]