



**2ND SEM. 2007/2008**

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**UNIVERSITY OF SWAZILAND**

**FINAL EXAMINATION PAPER**

**PROGRAMME: B.Sc. IN AGRONOMY YEAR II**

**COURSE CODE: CP 207**

**TITLE OF PAPER: 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) Illuviation [3]
- (ii) Soil Pedon [3]
- (iii) Soil Consistence [3]
- (iv) Soil Structure [3]
- (v) Soil horizon [3]

(b) Briefly discuss the influences of the following soil forming factors to the formation of soils.

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

[25]

**QUESTION 2**

(a) Discuss the similarities and dissimilarities between the following soil horizons in terms of pedological material contents and soil forming pedogenic processes.

- (i) Horizons E and A [5]
- (ii) Horizons B and C [5]

(b) Briefly discuss the following pedogenic processes:

- (i) Ferrallitization [5]
- (ii) Solodisation [5]
- (iii) Pedoturbation [5]

[25]

**QUESTION 3**

(a) Discuss the following soil physical properties in terms of their importance in soil pedology.

- (i) Soil Colour [5]
- (ii) Texture [5]

(b) Briefly discuss the major criteria used for the identification of the following soil orders:

- (i) Mollisol [5]
- (ii) Entisol [5]
- (iii) Vertisol [5]

**[25]**

**QUESTION 4**

(a) List and briefly describe any two [2] diagnostic organic materials.  
[10]

(b) Discuss the differences between drainage mottles and matrix mottles in terms of morphology, genesis and utilization. [10]

(c) Discuss the contrasts and comparisons between the following processes.  
physical weathering and chemical weathering.  
[5]

**[25]**

**QUESTION 5**

(a) List and describe any five [5] of the six [6] soil temperature regimes or categories.  
[10]

(b) Describe any three [3] of the categorical levels of the United States Comprehensive Soil Classification System by indicating the differentiating properties.  
[15]

**[25]**