



2ND SEM. 2005/2006

PAGE 1 OF 3

UNIVERSITY OF SWAZILAND

FINAL EXAMINATION PAPER

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

COURSE CODE: CP 304

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.**

**DO NOT OPEN THIS PAPER UNTIL PERMISSION HAS BEEN GRANTED BY
THE INVIGILATOR.**

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.

(i) Physical weathering and chemical weathering. [5]

[25]

QUESTION 5

(a) List and describe any five [5] of the six [6] soil temperatures 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]