



2nd Sem. 2011

PAGE 1 OF 3

UNIVERSITY OF SWAZILAND

FINAL EXAMINATION PAPER

PROGRAMME: B.Sc. IN AGRONOMY YEAR III

COURSE CODE: CP 308

TITLE OF PAPER: PEDOLOGY

TIME ALLOWED: TWO [2] HOURS

INSTRUCTIONS: ANSWER ANY FOUR [4] QUESTIONS .

NOTE : THIS 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 : Each answer carries three [3] marks.

- i) Soil chroma [3]
- (ii) Soil structure [3]
- (iii) Soil texture [3]
- (iv) Horizon [3]
- (v) Soil morphology [3]

b) Discuss the influences that are brought about by the following soil forming factors on soil formation.

- i) Parent materials [5]
- ii) Time [5]

[25]

QUESTION 2

a) Write short notes on the following soil horizons.

- i) Horizon A [5]
- ii) Horizon O [5]

[5]

b) Briefly discuss the following pedogenic processes:

- i) Podzolization [3]
- ii) Solodisation [3]
- iii) Illuviation [3]
- iv) Calcification [3]
- v) Leaching [3]

[25]

QUESTION 3

- a) Write short notes on the following soil orders in terms of their characteristics.
- | | |
|-----------------|-----|
| i) Vertisols | [5] |
| ii) Inceptisols | [5] |
| iii) Oxisols | [5] |
| iv) Alfisols | [5] |
| v) Entisols | [5] |
- [25]

QUESTION 4

- a) Briefly explain the processes that take place between the A and the B horizons [15]
- b) Discuss the differences between drainage and matrix mottles in terms of morphology, genesis and utilization. [10]
- [25]

QUESTION 5

- a) Identify and characterize any two of the diagnostic organic materials. Clearly indicate how they affect crop production in terms of nutrient release and soil structural stability. [15]
- b) Characterize five [5] of the six [6] soil temperature regimes or categories. [10]
- [25]