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2nd SEM. 2004/2005

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UNIVERSITY OF SWAZILAND

FINAL EXAMINATION PAPER

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

COURSE CODE: CP 304 /

TITLE OF PAPER: PEDOLOGY

TIME ALLOWED: TWO [2] HOURS

INSTRUCTIONS: ANSWER ANY FOUR [4] QUESTIONS

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BY THE CHIEF INVIGILATOR.**

QUESTION 1

- a) Define or give short descriptions of the following terms or processes : Each answer carries three [3] marks.
- i) Soil chroma
 - ii) Soil structure
 - iii) Soil texture
 - iv) Category
 - v) Soil morphology.
- [15]
- b) Discuss the influences that are brought about by the following soil forming factors to 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]
- b) Briefly discuss the following pedogenic processes:
- i) Leaching [3]

- ii) Solodisation [3]
 - iii) Eluviation [3]
 - iv) Calcification [3]
 - v) Gleying [3]
- [25]

QUESTION 3

- a) Write short note on the following soil orders in terms of their characteristics.
- i) Vertisol [3]
 - ii) Inceptisol [3]
 - iii) Oxisol [3]
 - iv) Alfisol [3]
 - v) Entisol [3]
- b) Compare and contrast the following processes .
- i) Physical weathering and chemical weathering [5]
 - ii) Eluviation and illuviation [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 general. [15]
 - b) Characterize five [5] of the six [6] soil temperature regimes or categories. [10]
- [25]