

**UNIVERSITY OF SWAZILAND**

**FINAL EXAMINATION PAPER**

**TITLE OF PAPER: APPLIED PHYSICAL GEOGRAPHY**

**COURSE CODE: GEP 227**

**TIME ALLOWED: THREE (3) HOURS**

**INSTRUCTIONS: ANSWER SECTION A WHICH IS  
COMPULSORY AND ANY OTHER TWO (2)  
QUESTIONS IN SECTION B**

**THIS PAPER IS NOT TO BE OPENED UNTIL PERMISSION HAS BEEN  
GRANTED BY THE CHIEF INVIGILATOR**

**SECTION A: COMPULSORY SECTION**

**QUESTION 1**

**(a) Define or give short descriptions of the following terms and phrases (Each question carries 2 marks).**

- (i) Biogeochemical weathering
- (ii) Mass wasting
- (iii) Cation exchange capacity
- (iv) Mechanical analysis
- (v) Illuviation

**[10]**

**(b) Discuss the factors and processes of soil formation and show how they contribute to the formation of soil.**

**[30]**

**[40]**

**SECTION B: ANSWER ANY TWO (2) QUESTIONS**

**QUESTION 2**

**(a) Define the term “soil organic matter”.**

**[5]**

**(b) Discuss the properties of organic matter which are important in improving plant growth, soil health and the quality of the environment.**

**[25]**

**[30]**

**QUESTION 3**

**(a) Describe the types of acidity found in soils and comment on the role of each in the behaviour of soils.**

**[10]**

**(b) Discuss the role of soil pH in determining soil character.**

**[20]**

**[30]**

**QUESTION 4**

- (a) Define the term “soil horizon” and indicate how soil horizons are identified and named in a representative mineral soil. [7]
- (b) What is a transitional horizon and how is it named? [4]
- (c) Using an appropriate diagram, illustrate the major soil horizons in a representative mineral soil and describe the properties of each horizon. [15]
- (d) What is the purpose of using lower case letters in the designation of a soil horizon? [4]
- [30]

**QUESTION 5**

Discuss the processes of mass wasting clearly indicating how they contribute to slope and soil development.