

**UNIVERSITY OF SWAZILAND**

**FINAL EXAMINATION PAPER**

**PROGRAMMES: BACHELOR OF SCIENCE AND BACHELOR OF  
EDUCATION SECONDARY YEAR II**

**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.**

36

**SECTION A: COMPULSORY SECTION**

**QUESTION 1**

(a) Define the following terms: (Each question carries 2 marks)

- (i) Geomorphology
- (ii) Isomorphous substitution
- (iii) Soil horizon
- (iv) Soil texture
- (v) Heterotrophic bacteria

(b) Identify the two types of soil colloids and describe the ways they obtain negative charges. [10 marks]

(c) Discuss the significance of clay minerals in soil science and show how they contribute to the quality of the environment. [20 marks]  
[40 marks]

**SECTION B.**

**QUESTION 2**

(a) Identify the categories into which mass wasting processes are classified and outline the nature of each class. [10 marks]

(b) Discuss the types of mass wasting processes and show how they shape the environment. [20 marks]  
[30 marks]

**QUESTION 3**

Discuss the nature and role of soil acidity in soils. [30 marks]

**QUESTION 4**

(a) Outline the role of microorganisms in soils [7 marks]

(b) Outline the importance of soil structure in soil science and comment on the contribution of soil structure to the quality of the environment. [8 marks]

(c) Discuss the strategies that can be recommended to maintain or improve the structure of soils. [15 marks]  
[30 marks]

**QUESTION 5**

(a) Discuss the nature of the factors which influence the occurrence of landslides in the environment. [20 marks]

(b) Outline the strategies that can be recommended to minimize the hazards associated with landslides. [10 marks]

[30 marks]