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) Physical weathering
(ii) Soil creep
(iii) Cation exchange capacity
(iv) Soil texture
(v) Eluviation

(b) Discuss the physical and chemical effects of organic matter in soils and highlight the contribution of soil organic matter to the quality of the environment. [30]

[40]

SECTION B: ANSWER ANY TWO (2) QUESTIONS

QUESTION 2

(a) Provide a basis for the formulation of the term biogeochemical weathering in the weathering of rocks and minerals to form soil. [5]

(b) Discuss the agents of physical and biogeochemical weathering of rocks and minerals to form soil. [25]

[30]

QUESTION 3

(a) Identify the types of soil colloids found in soils and describe the ways in which they obtain negative charges. [10]

(b) Discuss the role of clay minerals in soil. [20]

[30]

QUESTION 4

(a) Define the term "soil structure" and highlight the significance of soil structure in soils. [10]

(b) Discuss the management strategies you would recommend to maintain or improve the structure of a soil. [20]

[30]

QUESTION 5

(a) Define the term "soil horizon" and describe how horizons are identified and named in a soil profile. [5]

(b) Using an appropriate diagram, illustrate the major horizons of a representative mineral soil and describe the properties of each. [10]

(c) Discuss the processes of soil formation and give appropriate examples in each case. [15]

[30]