

**UNIVERSITY OF SWAZILAND
DEPARTMENT OF GEOGRAPHY, ENVIRONMENTAL SCIENCE
AND PLANNING
FINAL EXAMINATION, MAY 2008**

TITLE OF PAPER: **APPLIED PHYSICAL
GEOGRAPHY**

COURSE CODE: **GEP 227**

TIME ALLOWED: **THREE HOURS**

INSTRUCTIONS: **ANSWER QUESTION ONE AND
ANY OTHER TWO QUESTIONS**

MARKS ALLOCATED: **QUESTION 1 CARRIES 40
MARKS. THE OTHER
QUESTIONS CARRY 30 MARKS
EACH.**

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GRANTED BY THE INVIGILATOR**

SECTION A

QUESTION 1 (COMPULSORY)

- a. Discuss the factors that have contributed to the distribution of soils around the world. (15 marks)
- b. Describe any two transformation and two translocation processes in soils, explaining how they contribute to the differentiation of soil horizons. (10 marks)
- c. Describe how the following factors contribute to the rate of rock weathering.
- i. Rock lithology (5 marks)
 - ii. Topography (5 marks)
 - iii. Climate (5 marks)

[40 MARKS]

SECTION B

ANSWER ANY TWO QUESTIONS

QUESTION 2

Explain how the following soil properties influence the five ecological functions of soil.

- a. Texture (10 marks)
- b. Cation exchange capacity (10 marks)
- c. Soil microorganisms (10 marks)

(30 marks)

QUESTION 3

- a. State the properties of basaltic, andesitic and rhyolitic magma. (12 marks)
- b. Describe how the following volcanic features are developed.
- i) Tephra cones (3 marks)
 - ii) Stratovolcanoes (3 marks)
 - iii) Shield volcanoes (3 marks)
- c. Describe how the properties of andesitic, basaltic and rhyolitic magma determine the shape of the three features in 'b' above. (9 marks)

(30 marks)

QUESTION 4

- a. Describe how tectonic activities result in diastrophism. (15 marks)
- b. What is the role of convection currents occurring in the mantle in the development of the Himalayas Mountain, the Mid Oceanic Ridge and Islands. (15 marks)

(30 marks)

QUESTION 5

- a. Discuss the different types of metamorphism, stating where each is most likely to occur and why. (10 marks)
- b. Describe the different ways in which igneous and metamorphic rocks could be classified. (20 marks)

(30 marks)