

The National University of Lesotho

BSc, B. Ed., URP Examination

GES 2302: Advanced Human and Physical Environmental Systems

January 2024

Duration: 3 hours

Marks: 100

Instructions:

- Answer any **four (4)** questions
 - Where applicable illustrate your answer with diagrams.
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Question 1

- Describe the general global atmospheric circulation. (15)
 - Describe how Coriolis effects influence global air circulation. (10)
 - Describe wind flow and pressure relationship. (5)
- (25)**

Question 2

- Explain the uneven heating of earth surface. (10)
 - Mention and explain major factors that influence the annual cycle of air temperature. (10)
 - What are the possible impacts of the present heat wave to the environment? (5)
- (25)**

Question 3

- Where does organic matter in the soil come from? (2)
 - Mention and describe any 3 characteristics of the soil. (9)
 - What is the difference between soil profile and soil horizon? (4)
 - Explain why it is important to know soil characteristics before doing any infrastructure development. (10)
- (25)**

Question 4

- a. Mention 3 types of rocks and how each transform from one form to another. (12)
 - b. Describe chemical weathering and any two types. (9)
 - c. What is the difference between mass wasting and weathering? (4)
- (25)**

Question 5

- a. Describe how condensation occurs. (9)
 - b. What is the difference between evaporation and evapotranspiration? (6)
 - c. Urban areas are commonly affected by floods more than rural areas, explain why. (10)
- (25)**

Question 6

- a. Describe how energy flows in an ecosystem and give an example in the form of a food chain. (10)
 - b. Describe impacts of carbon dioxide in the atmosphere and how carbon emission can be controlled. (15)
- (25)**