

The National University of Lesotho
BSc Examination
PG 2422: Introduction to Geomorphology

April 2023

Duration: 3 hours

Marks: 100

Instructions:

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

- a) Discuss history of geomorphology and why the knowledge of it is important in the present and in the future. (10)
 - b) Discuss the relevance of geomorphology in environmental management. (15)
- (25)**

Question 2

- a) Differentiate between catastrophism and uniformitarianism, give example of one early geomorphologist that supported each of the theory. (10)
- b) Which of the theories in (a) above is Davis cycle of erosion pertinent to, support your answer. (10)
- c) Describe the relationship of forms and processes in geomorphological studies. (5)

(25)

Question 3

- a) Mention the landforms that are formed by the following processes and give examples of such landforms found in your respective countries.
 - i. Continental tectonic plates convergence
 - ii. Continental tectonic plates divergence
 - iii. Erosion
 - iv. Dissolution of bedrock
 - v. Glacier melting
- (10)

- b) Mention and describe any 4 geomorphological processes driving forces. (12)
- c) What is the importance of spatial and temporal scales in geomorphological studies? (3)
- (25)

Question 4

- a) Define a system and why we use systems approach in geomorphology, give example of any geomorphic system mentioning all the components. (15)
- b) Define the following sub-disciplines of geomorphology and give example of a landform formed under each sub-discipline.
- i. Hillslope Geomorphology
 - ii. Glacial Geomorphology
 - iii. Coastal Geomorphology
 - iv. Dessert Geomorphology
 - v. Karst Geomorphology (10)
- (25)

Question 5

Mention and explain any 5 factors that affect the rate of geomorphological processes, explain how they influence those processes and the rates. (25)

(25)

Question 6

- a) Describe a drainage basin. (5)
- b) Mention two human activities that affect the status of a drainage basin. (10)
- c) Mention and explain two land conservation measures that are applicable and optimal in Lesotho. (10)
- (25)