NATIONAL UNIVERSITY OF LESOTHO

BSC. EXAMINATION

PG 3321: PROCESS GEOMORPHOLOGY

DECEMBER 2023 **TOTAL MARKS:** 100 Marks **DURATION:** 3 hours

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INSTRUCTION(S):

1. Answer four (4) questions in the answer book provided
2. Where applicable, illustrate your answer with diagrams.

Each question carries 25 marks.

Question 1

To advance our understanding of landforms, it is crucial to understand Geomorphological processes. Discuss **[25 marks]**

Question 2

William Morris Davis' Model of landscape evolution has dominated the debate in geomorphic studies for a long time. State the major components of the model and provide the four major criticisms. **[25 marks]**

Question 3

a. Describe Equilibrium and its relevance to geomorphic processes. (5)

b. Describe in detail what a system is in Geomorphology. (6)

c. Differentiate between an open system and a closed system, giving two (2) examples of each. (8)

d. Figure 1 below shows some of the perturbations of a geomorphic system. Explain in detail what the graph reflects and give an interpretation of the results shown. (8)

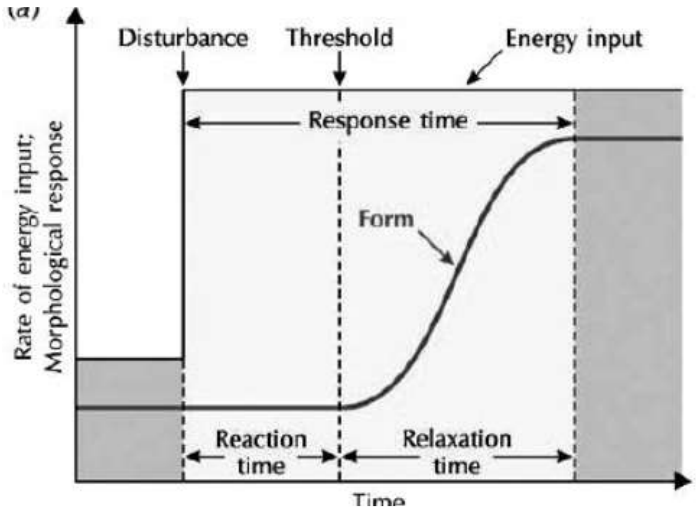

Figure 1: Perturbations of Geomorphic Systems

[25 marks]

Question 4

Critically review the argument that the roles of a Process Geomorphologists are becoming more important and are likely to become much more important in the near future.

NB: Your answer must focus on the projected environmental changes envisaged for the future (e.g. climate change) [**25 marks]**

Question 5

The landscape, together with its components have evolved over a long period of time. Therefore, the landscape features are characteristic of the past processes and the process rates. It is therefore critical to appreciate environmental change in order to interpret the landscape. Define any two (2) proxy indicators used in interpreting environmental change and describe how they are used to interpret the landscape. [**25 marks]**

Question 6

Write an essay on the use of either Water Erosion Prediction Project (WEPP) or Universal Soil Loss Equation (USLE) in the study of soil erosion. Include in your essay the utility, advantages and drawbacks of the model. **[25 marks]**

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