



**FACULTY OF SCIENCE**

**DEPARTMENT OF GEOGRAPHY, ENVIRONMENTAL MANAGEMENT & ENERGY STUDIES**

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| <b>MODULE</b> | <b>GGR2A10</b><br><b>PEDOGRAPHY &amp; BIOGEOGRAPHY</b> |
| <b>CAMPUS</b> | <b>APK</b>   |
| <b>EXAM</b>   | <b>JUNE 2016</b>                                       |

**DATE: 2016.06.07**

**SESSION: 08:30 – 11:30**

**ASSESSOR(S)**

**Ms M. Rabumbulu**  
**Ms A. Ngie**

**INTERNAL MODERATOR**

**DR. S. Tesfamichael**

**DURATION 3 HOURS**

**MARKS 100**

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**NUMBER OF PAGES: 3 Pages**

**INSTRUCTIONS:**

- 1. NB! Answer all questions as per instruction**
- 2. Answer Sections A & B in SEPARATE examination scripts**
- 3. This exam paper may not be removed from the exam venue**

### SECTION A: PEDOGRAPHY (Ms M. Rabumbulu)

Answer **BOTH** questions in this section but note the choice **within** each question. Use **diagrams** where appropriate.

1. Write explanatory notes, of about one page each, on any **THREE** of the following:

- a) The difference between positive and negative feedback response systems in physical geography (provide examples)
- b) A “worst case scenario” for the Universal Soil Loss Equation
- c) South Africa’s binomial soil classification system
- d) The textural and morphometric properties of sediments and their significance
- e) Define relative, equivalent and absolute dating techniques in Quaternary geomorphology. Provide appropriate examples to support the definitions.

[10x3]

2. Answer **ONE** of the following:

- a) Explain the association between climate, soil processes and soil distribution patterns on a global scale. Include the concepts of zonal, intrazonal and azonal soils. Go on to explain soil classification, with emphasis on the South African classification system.
- b) Discuss, using appropriate examples, the role of geomorphology in planning, developing and managing the biophysical and/or the fluvial environment.
- c) Describe what soil erosion is, as well as the causes and consequences of soil erosion in South Africa. Give methods of *how* soil erosion can be limited.

[20]

**SUB-TOTAL** **[50]**

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## SECTION B: BIOGEOGRAPHY (Mrs A. Ngie)

**Answer ALL the questions in this Section.**

1. Define geography, biogeography and environment; and go on to describe the relationship with each other. [10]
  
2. (a) The biosphere is the highest level of organisation in Biosystems. What is a system? [2]
  
- (b) What are the characteristics of a system and describe the **THREE** types of systems with examples to each. [8]
  
3. Communities can be characterized structurally. Name and explain **TWO** main structural divisions that are used to describe communities. [10]
  
4. (a) What are ecosystem services? [2]
  
- (b) Describe the **FOUR** major groups of these services? [8]
  
5. One of the advantages of remote sensing is the acquisition of data repeatedly at specified times or intervals. This helps in the monitoring of changes on the earth's surfaces. Explain the process of change detection using remotely sensed data. Use examples where necessary to support your answer. [10]
  
  
  

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| <b>SUB-TOTAL</b> | <b>[50]</b>  |
| <b>TOTAL:</b>    | <b>[100]</b> |

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