

UNIVERSITY OF ESWATINI



SEMESTER 1 MAIN EXAMINATION PAPER, DECEMBER 2019

B.A., BASS, B. Ed. (FT/PT)

FACULTY OF SCIENCE AND ENGINEERING

DEPARTMENT OF GEOGRAPHY, ENVIRONMENTAL SCIENCE AND PLANNING

COURSE CODE: GEP311/312

PAPER TITLE: Biogeography

TIME ALLOWED: Three (3) Hours

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- INSTRUCTIONS:**
1. This paper consists of Section (A) and (B)
  2. Section A is compulsory
  3. Answer any TWO questions from EACH Section
  4. Illustrate your answers with examples and clearly drawn diagrams where appropriate

**ALLOCATION OF MARKS:**

- Question A carries 40 Marks
- : In Section B, each question carries 30 Marks
- : Total marks for the paper is 100

*Candidates may complete the front cover of their answer book when instructed by the Chief Invigilator and sign their examination attendance card but must NOT write anything else until the start of the examination period is announced.*

*No electronic devices capable of storing and retrieving text, including dictionaries and any form of foreign material may be used while in the examination room*

**DO NOT Turn examination paper over until instructed to do so**

## GEP311/312: BIOGEOGRAPHY – DECEMBER 2019

## SECTION A: COMPULSORY

## QUESTION 1

- a) Explain how you would estimate the distribution of invasive plant species in any community of your choice in order to sensitize community members about the extent of invasion. (20 marks)
- b) Using the data in Table 1 below, calculate the following:
- Species richness in quadrats 1 and 4. (4 marks)
  - Species equitability in quadrats 2 and 3. (8 marks)
  - Coefficient of association between Imbondvo lemhlophe *Combretum zeyheri* and Umncenzi (*Syzgium cordatum*). (4 marks)
  - Coefficient of association between Imbondvo lemhlophe *Combretum zeyheri* and Umhonono wemfula (*Terminalia sambesiaca*). (4 marks)
- (40 Marks)**

Table 1: The most common and endangered species on Bhabhadla mountain

Name of species	Number of individuals			
	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4
1. Imbondvo lemnyama ( <i>Combretum molle</i> )	81	72	67	54
2. Imbondvo lemhlophe ( <i>Combretum zeyheri</i> )	26	13	45	0
3. Incithamuzi ( <i>Ilex mitis</i> )	13	24	20	16
4. Umntulu ( <i>Vangueria infausta</i> )	24	13	9	11
5. Sihubhulu ( <i>Bridelia Micrantha</i> )	5	7	11	8
6. Umncenzi ( <i>Syzgium cordatum</i> )	20	9	0	0
7. Umhlume ( <i>Adina</i> )	13	8	9	0
8. Umkhamamasi wemfula ( <i>Tabernaemontana elegans</i> )	3	5	21	16
9. Umhonono wemfula ( <i>Terminalia sambesiaca</i> )	0	8	7	0
10. Umkhiwa wemfula ( <i>Ficus capensis</i> )	11	0	17	19

Source: Hypothetical

**SECTION B: ANSWER ANY TWO QUESTIONS**

**QUESTION 2**

“Interactions and associations of some species with others have a role in determining their geographical distribution” (Spellerberg and Sawyer, 1999:123). Discuss the validity of the statement.

**(30 Marks)**

**QUESTION 3**

Discuss possible measures that can be used to conserve wetlands on Swazi Nation Land.

**(30 Marks)**

**QUESTION 4**

‘Organisms do not necessary die when their environment change’. Discuss the validity of the statement.

**(30 Marks)**

**QUESTION 5**

Discuss how human beings have affected the environment through industrial establishments.

**(30 Marks)**