

**UNIVERSITY OF SWAZILAND
DEPARTMENT OF GEOGRAPHY, ENVIRONMENTAL SCIENCE AND
PLANNING
FINAL EXAMINATION, DECEMBER 2007
B.A., BASS, B.Ed.**

TITLE OF PAPER: BIOGEOGRAPHY

COURSE NUMBER: GEP 312

TIME ALLOWED: THREE (3) HOURS

INSTRUCTIONS:

- 1. ANSWER THREE QUESTIONS**
- 2. QUESTION 1 IS COMPULSORY**
- 3. ILLUSTRATE YOUR ANSWERS WITH
EXAMPLES AND CLEARLY DRAWN DIAGRAMS
WHERE APPROPRIATE**

**ALLOCATION OF MARKS: QUESTION 1 (COMPULSORY) CARRIES
40 MARKS WHILE THE REST CARRY 30
MARKS EACH.**

**THIS PAPER SHOULD NOT BE OPENED UNTIL PERMISSION IS GRANTED
BY THE INVIGILATOR**

**SECTION A
COMPULSORY**

QUESTION 1

As a biogeographer logically explain how you would measure the impact of any invasive plant species in a community of your choice in the country.

(14 marks)

b) Discuss the impacts of invasive plant species on agricultural activities.

(14 marks)

c) Given the hypothetical data in Table 1 calculate the co-efficient of association between *Chromoleana odorata* and the following species: *Syzygium cordatum*, *Vangueria cyanescens*, *Acacia robusta*, and *Combretum molle*.

(12 marks)

Table 1: Number of individuals for each species within six quadrats in a hypothetical area

Quadrat Number	<i>Chromoleana Odorata</i>	<i>Syzygium cordatum</i>	<i>Vangueria cyanescens</i>	<i>Acacia robusta</i>	<i>Combretum molle</i>
1	80	60	0	42	39
2	120	88	0	51	33
3	65	21	50	47	29
4	0	0	19	9	0
5	23	0	11	0	17
6	0	5	9	14	19

(40 marks)

SECTION B: ANSWER ANY TWO QUESTIONS

QUESTION 2

“For any individual community there are many factors which can affect the number of species present” (Chapman and Reiss, 1999:181). Discuss the validity of this statement.

(30 marks)

QUESTION 3

a) Explain how the development of a climax community influences the horizontal structure of communities.

(10 marks)

b) Using examples, explain how plants and animals are stratified on the earth surface.

(20 marks)

(30 marks)

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QUESTION 4

a) Discuss the effects of environmental change on ecosystem characteristics on the earth surface. (20 marks)

b) Using examples, explain physiological adaptations of plants to environmental changes on the earth surface. (10 marks)

(30 marks)

QUESTION 5

Discuss how human beings have affected biomes through agricultural developments and industrial establishments. (30 marks)