

UNIVERSITY OF SWAZILAND

**DEPARTMENT OF GEOGRAPHY, ENVIRONMENTAL SCIENCE AND
PLANNING**

**SUPPLEMENTARY EXAMINATION: JULY 2013
BSc. 1, BA 1, HUM 1, BED 1**

TITLE OF PAPER : Introduction to the Physical Environment

COURSE NUMBER : GEP 111

TIME ALLOWED : 3 hours

**INSTRUCTIONS : ANSWER ONE QUESTION FROM
SECTION A (40 MARKS)
ANSWER ANY TWO QUESTIONS
FROM SECTION B (60 MARKS)**

**MARKS ALLOCATED : EACH QUESTION OF SECTION A
40 MARKS.
THE OTHER QUESTIONS CARRY
30 MARKS EACH
TOTAL MARKS: 100**

**THIS PAPER IS NOT TO BE OPENED UNTIL PERMISSION HAS BEEN
GRANTED BY THE INVIGILATOR.**

.Materials needed: Map of Swaziland (PWD 18), graph paper

SECTION A: TECHNIQUES AND SKILLS

CHOOSE AND ANSWER ONE QUESTION ONLY

QUESTION 1

a) What is
i) a map (2 marks)

ii) a map scale? (2 marks)

b) Explain how a map scale can be expressed. (6 marks)

c) Explain how you would calculate an area of an irregular feature using the *Graph Paper Method*. (10 marks)

d) With reference to the topographical map of Swaziland (PWD 18) calculate the surface area of farm No. 521 in kilometre squares and in hectares. (Show all the working clearly). (8 marks)

e) Copy and complete the table below. (6 marks)

Location	Time	Day	Location	Time	Day
162°E	9:50 am	Thursday	90°W	.....	.....
27°W	.....	.....	1°E	07:34 am	Wednesday
155°W	11:00 am	Saturday	.....	07:00 am	.....

f) A camera, with a focal length of 6.0 cm, mounted on an aircraft flying at an altitude of 7 000 metres above sea level was used to take photographs of an area located at approximately 1000 metres above sea level. What is the scale of those aerial photographs?

(6 marks)

QUESTION 2

- a) Define the following: (10 marks)
- i) Relative humidity
 - ii) Drainage net
 - iii) Soil horizon
 - iv) Southing
 - v) Dew point
- b) Using the map of Swaziland (PWD 18), draw a profile from Kirkhill Dipping Tank (054227) to Ensokolweni School (117219). Use a vertical exaggeration of 10. (8 marks)
- c) With reference to topographical map of Swaziland (PWD 18), state the distance from the *Equator*, *meridian of origin*, and the *Greenwich meridian* to the following locations in kilometres. (14 marks)
- i) Nhlambeni School
 - ii) Lwandeni Trigonometrical Station
- d) Explain the steps involved in measuring a river discharge using a current meter. (8 marks)

SECTION B: ANSWER ANY TWO QUESTIONS

QUESTION 2:

Describe and discuss the properties of the different layers of the Earth's atmosphere. Illustrate your answer with a schematic diagram.

(30 marks)

QUESTION 3:

Discuss the weathering types found in Swaziland and explain the processes that are responsible for them.

(30 marks)

QUESTION 4:

Discuss the consequences that are related to the human-induced climatic warming of the Earth.

(30 marks)

QUESTION 5:

Describe the events that occur during the process of continental drifting, and outline considerations about the speed at which this occurs as well as the mechanisms thought to be responsible.

(30 marks)