

UNIVERSITY OF SWAZILAND
DEPARTMENT OF GEOGRAPHY, ENVIRONMENTAL SCIENCE AND PLANNING
SUPPLEMENTARY EXAMINATION, JULY 2014
B.A., B.Ed., B.Sc., BASS, IDE.

TITLE OF PAPER: INTRODUCTION TO THE NATURAL ENVIRONMENT

COURSE NUMBER: GEP 111

TIME ALLOWED: THREE (3) HOURS

INSTRUCTIONS: THIS PAPER IS DIVIDED INTO TWO SECTIONS

SECTION A: TECHNIQUES AND SKILLS

- 1. ANSWER ALL QUESTIONS (COMPULSORY)**
- 2. THIS SECTION CARRIES 40 MARKS**

SECTION B: SHORT ANSWERS / ESSAYS

- 1. ANSWER ANY TWO QUESTIONS**
- 2. EACH QUESTION CARRIES 30 MARKS**

SPECIAL REQUIREMENTS: Map of Swaziland Sheet No. 10

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

GEP 111: INTRODUCTION TO THE NATURAL ENVIRONMENT - JULY 2014

**SECTION A: TECHNIQUES AND SKILLS (40 MARKS)
COMPULSORY**

QUESTION 1

- a) List six important attributes of a map. (6 marks)
- b) Copy and complete Table 1 below. (8 marks)

Table 1: A hypothetical relationship between location, time and day

Location	Time	Day	Location	Time	Day
162° W	7:30 am	Thursday	80° W	_____
85° E	8:00 pm	Monday	_____	6:00 am
175° W	_____	Friday	31° E	10:00 am,
165° E	5:00 pm	_____	_____	12:00 noon,	Sunday

- c) i) A camera, with a focal length of 15.0 cm, mounted on an aircraft flying at an altitude of 15, 250 metres above sea level was used to take photographs of the western and eastern border points of Swaziland (Ngwenya (1410 metres) and Lomahasha (580 metres), respectively). Considering the different altitude of both locations calculate the mean scale of the photographs. (6 marks)
- ii) If the same camera was used to take photographs of both locations at a scale of about 1:60 000, calculate the respective flying heights of the aircraft. (4 marks)
- d) Using the Thiesen Polygon method, calculate the average annual rainfall for the drainage basin show on Figure 1. (6 marks)
- e) Atmospheric pressure decreases with an increase in altitude at an approximate rate of 12.7 millibars (mb) per 100 metres. Given that atmospheric pressure is 1 000 millibars at sea level, estimate the atmospheric pressure in millibars at the following locations:
- i) Mount Everest (8 848 metres) (2 marks)
 - ii) Tugela Gorge (135 metres) (2 marks)
 - iii) Bulembu Mountain (1 590 metres) (2 marks)
 - iv) Gobolondlo Mountain (1 800 metres) (2 marks)
 - v) Mahamba Mountain (1 650 metres) (2 marks)

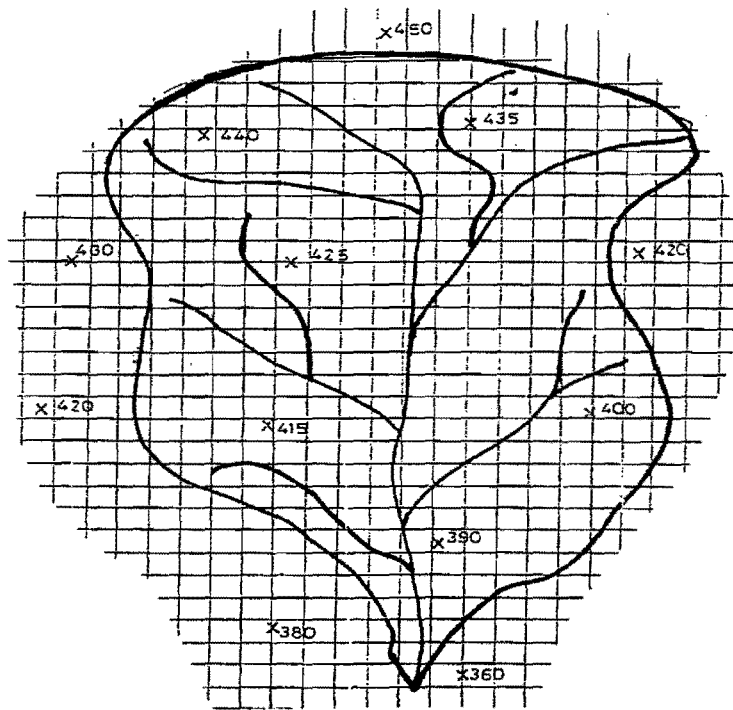


Figure1: A drainage basin for a hypothetical catchment

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:

Using examples and diagrams, explain the meaning of the term "Rock Cycle".

30 marks

QUESTION 4:

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

30 marks

QUESTION 5:

Using examples and diagrams, explain the meaning of the term "6th Extinction".

30 marks