# UNIVERSITY OF SWAZILAND DEPARTMENT OF GEOGRAPHY, ENVIRONMENTAL SCIENCE AND PLANNING

MAIN EXAMINATION:

MAY, 2011

B.Sc. III, Bed. III

TITLE OF PAPER

: DRAINAGE BASIN STUDIES

**COURSE NUMBER** 

**GEP 321** 

TIME ALLOWED

THREE (3) HOURS

**INSTRUCTIONS** 

SECTION A IS COMPULSORY

ANSWER ANY TWO QUESTIONS FROM

**SECTION B** 

ILLUSTRATE YOUR ANSWERS WITH

**APPROPRIATE DIAGRAMS** 

MARKS ALLOCATED

**QUESTION 1 CARRIES 40 MARKS THE** 

OTHER QUESTIONS CARRY 30 MARKS

**EACH** 

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

# SECTION A: COMPULSORY QUESTION

# Question 1

(a) Explain the importance of studying the drainage basin characteristics.

(10 marks)

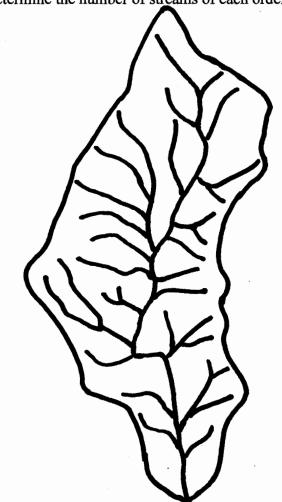
(b) Figure 1 shows the drainage basin of Ntondwane river.

(i) Determine the stream frequency.

(20 marks)

(ii) Determine the number of streams of each order.

(10 marks) **(40 marks)** 



Scale 1:50,000

Figure 1: Drainage basin of Ntondozi river

# SECTION B: ANSWER ANY TWO QUESTIONS

### Question 2

Explain the advantages of using a drainage basin as a basis for planning in the sector of water resources. (30 marks)

### Question 3

Discuss the factors that influence the rate of erosion in a catchment. (30 marks)

# Question 4

Explain the drainage basin water conservation approaches. (30 marks)

# Question 5

Discuss the importance of measuring sediment in water resources planning.

(30 marks)