

UNIVERSITY OF ESWATINI
DEPARTMENT OF GEOGRAPHY, ENVIRONMENTAL SCIENCE AND
PLANNING

MAIN EXAMINATION MAY/JUNE 2019

B.Sc. III, B.Ed

TITLE OF PAPER : DRAINAGE BASIN STUDIES

COURSE NUMBER : GEP316

TIME ALLOWED : THREE (3) HOURS

INSTRUCTIONS : SECTION A IS COMPULSORY
ANSWER ANY TWO (2) QUESTIONS FROM
SECTION B. ILLUSTRATE YOUR ANSWERS
WITH APPROPRIATE DIAGRAMS AND SHOW
YOUR WORKING IN ALL CALCULATIONS

MARKS ALLOCATED : QUESTION ONE CARRIES 40 MARKS AND THE
OTHER QUESTIONS CARRY 30 MARKS EACH

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

GEP316: DRAINAGE BASINS, MAIN

(MAY/JUNE 2019)

SECTION A: COMPULSORY QUESTION

QUESTION 1

Explain the fluvial system variables and how they influence the fluvial geomorphology of a drainage basin.

(40 Marks)

SECTION B: ANSWER ANY TWO QUESTIONS

QUESTION 2

- a) Explain what is meant by the term 'incipient motion.' (5 marks)
- b) Discuss how sediment discharge is measured in a stream. (25 marks)

(30 Marks)

QUESTION 3

- a) Discuss the impacts of sedimentation in water resources. (20 marks)
- b) Explain a sediment rating curve and its importance in river management. (10 marks)

(30 Marks)

QUESTION 4

- a) Explain Strahler's stream numbering system and how it is used to determine the stream frequency. (25 marks)
- b) Why do the channel width and discharge increase downstream for most rivers in Swaziland? (5 marks)

(30 Marks)

QUESTION 5

Explain how you would evaluate the available water resources of a basin.

(30 Marks)