

UNIVERSITY OF SWAZILAND

DEPARTMENT OF GEORAPHY, ENVIRONMENTAL SCIENCE AND PLANNING

MAIN EXAMINATION: MAY, 2018

BSc & B.Ed. III

TITLE OF PAPER : DRAINAGE BASIN STUDIES

COURSE NUMBER : GEP316

TIME ALLOWED : THREE (3) HOURS

**INSTRUCTIONS : ANSWER ONE QUESTION FROM SECTION A
ANSWER TWO QUESTION FROM SECTION B
ILLUSTRATE YOUR ANSWERS WITH
APPROPRIATE DIAGRAMS**

**MARKS ALLOCATED : QUESTION 1 CARRIES 40 MARKS
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) Identify and explain the drainage system variables in drainage basin evolution. (20 marks)
 - b) Explain the role played by climatic factors in shaping land forms in a drainage basin. (20 marks)
- (40 Marks)**

SECTION B: ANSWER ANY TWO (2) QUESTIONS

QUESTION 2

Discuss the factors influencing the variation of the sediment yield in Figure 1 below.

(30 Marks)

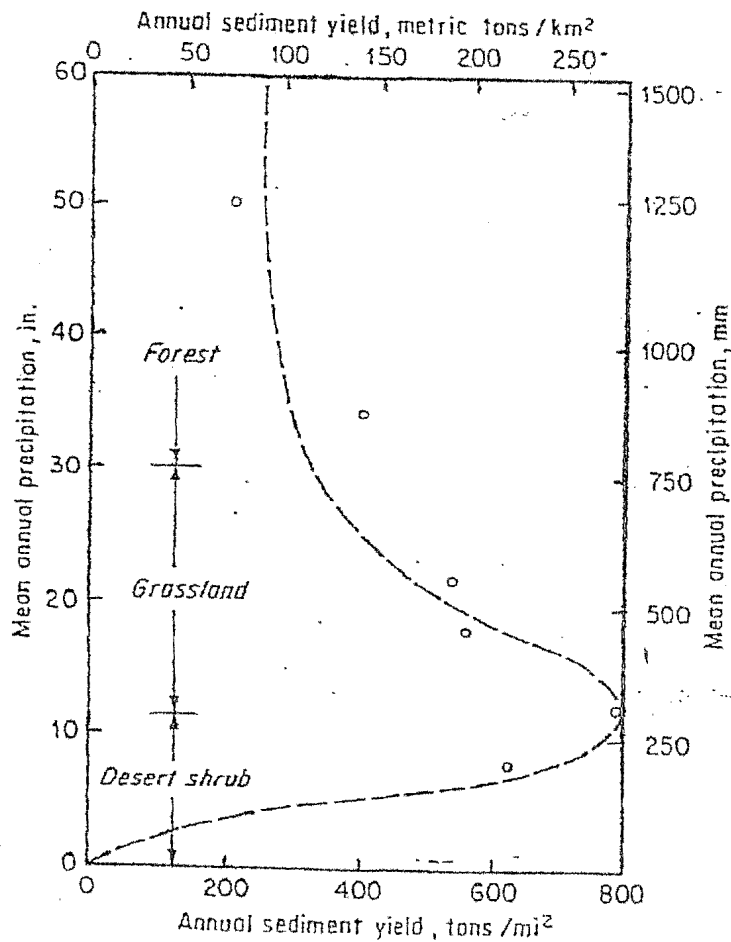


Figure 1 Sediment yield as a function of mean annual precipitation

QUESTION 3

'Drainage basin management is important'. Discuss the validity of this statement. (30 Marks)

QUESTION 4

- a) What do you understand by the term 'incipient motion' of sediment? (5 marks)
 - b) Explain how sediment is transported in a river. (5 marks)
 - c) Explain the factors influencing changes of the morphology of a river channel. (20 marks)
- (30 Marks)

QUESTION 5

'Swaziland has plenty of water and yet it suffers from water scarcity related problems'.

Discuss the validity of this statement.

(30 Marks)