

**UNIVERSITY OF SWAZILAND**  
**DEPARTMENT OF GEORAPHY, ENVIRONMENTAL SCIENCE AND PLANNING**

**MAIN EXAMINATION:            MAY, 2015**

**B.Sc. III**

**TITLE OF PAPER            :        DRAINAGE BASIN STUDIES**

**COURSE NUMBER            :        GEP 321**

**TIME ALLOWED             :        THREE (3) HOURS**

**INSTRUCTIONS             :        QUESTION 1 IN SECTION A IS COMPULSORY**  
**ANSWER 2 QUESTIONS 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) Explain how human activities influence the sediment yield of a drainage basin. (20 marks)
  - b) Describe and explain the relationship between sediment yield and river flow discharge shown in Figure 1 below. (20 marks)
- (40 Marks)**

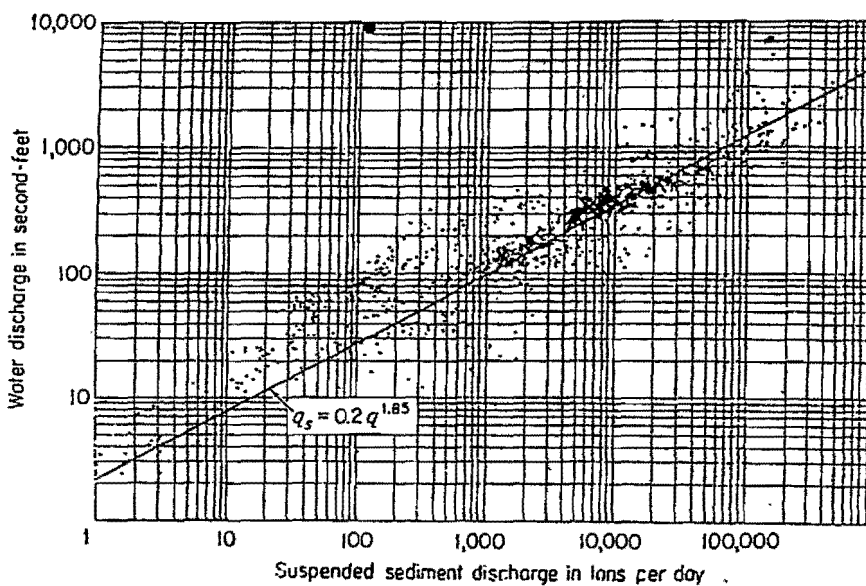


Figure 1 Sediment rating curve for a hypothetical river

SECTION B: ANSWER ANY TWO QUESTIONS

Question 2

Explain the stages of the evolutionary development of a drainage basin. (30 Marks)

**Question 3**

Discuss the three knowledge areas that are focal in drainage basin planning.

**(30 Marks)**

**Question 4**

Discuss the process of issues identification in drainage basin water resources planning.

**(30 Marks)**

**Question 5**

'Stakeholder participation in water resources development is very important'. Discuss with reference to Swaziland.

**(30 Marks)**