

UNIVERSITY OF SWAZILAND

**SUPPLEMENTARY EXAMINATION:
B.Sc. IV**

JULY 2006

TITLE OF PAPER : WATER RESOURCES PLANNING

COURSE NUMBER : GEP 421

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) Discuss the history of water law. (15 marks)

(b) Discuss the four principle doctrines in water law. (25 marks)

(40 marks)

SECTION B: ANSWER ANY TWO QUESTIONS

Question 2:

One of the tasks in the establishment of an irrigation scheme is the determination of the crop water requirement. Explain how you would determine the water requirement of a given crop. (30 marks)

Question 3:

Distinguish between aerobic and facultative lagoons. (30 marks)

Question 4:

(a) Explain the factors affecting water use in urban areas. (15 marks)

(b) Explain how water use in urban areas is estimated. (15 marks)

(30 marks)

Question 5:

Discuss the causes and management of floods. (30 marks)