

UNIVERSITY OF SWAZILAND
Faculty of Health Sciences
DEGREE IN ENVIRONMENTAL HEALTH
MAIN EXAMINATION PAPER 2013

TITLE OF PAPER : **WATER RESOURCES MANAGEMENT**

COURSE CODE : **EHS 581**

DURATION : **2 HOURS**

MARKS : **100 MARK**

INSTRUCTIONS : **READ THE QUESTIONS & INSTRUCTIONS CAREFULLY**

: **ANSWER ALL FOUR QUESTIONS**

: **EACH QUESTION CARRIES 25 MARKS**

: **WRITE NEATLY & CLEARLY**

: **NO PAPER SHOULD BE BROUGHT INTO NOR OUT OF THE EXAMINATION ROOM**

: **BEGIN EACH QUESTION ON A SEPARATE SHEET OF PAPER**

DO NOT OPEN THIS QUESTION PAPER UNTIL PERMISSION IS GRANTED BY THE INVIGILATOR

EHS 581 Water Resources Management Final Examination 2013

Question one

- a) Mention five components of water pricing that help manage water demand
(5 marks)
- b) Why do water managers have to charge consumers for water use, yet this is a natural resource?
(5 marks)
- c) Explain five points you will use to create incentives for water demand management?
(15 marks)

Question two

The water price is composed of many different elements that reflect production of the commodity. Mention five of these elements and describe how they influence water resources management?
(25 Marks)

Question three

- a) What are the four key reasons for population projections in water resources management?
(10 Marks)

- b) A city has the following population in 2000 and 2005

Year	City population
2000	10 000
2005	12 000

It has been established that the population grew exponentially during this period.

- a) What is the average annual growth rate of the population of this city during the period under consideration?
(5 marks)
- b) Make a population projection for 2010 if the growth rate is the same.(10 marks)

Question four

- a) With an aid of a diagram illustrate the relations between price and demand to show water project elasticity.
(10 marks)
- b) Explain why domestic water use is most of the time rigid to water price increase?
(5 marks)
- c) Demonstrate by use of a diagram, how you will achieve cost recovery and equity in your water charging system for an urban area?
(10 marks)