

UNIVERSITY OF SWAZILAND

Faculty of Health Sciences

DEGREE IN ENVIRONMENTAL HEALTH

SUPPLEMENTARY EXAMINATION PAPER 2014

TITLE OF PAPER : WATER RESOURCES MANAGEMENT II  
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

**Question one**

- a) Explain five points you will use to create incentives for water demand management? (25 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 2005 and 2010

Year	City population
2005	20 000
2010	25 000

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 2020 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)