



UNIVERSITY OF SWAZILAND
Faculty of Health Sciences

DEGREE IN WATER RESOURCES AND ENVIRONMENTAL
HEALTH MANAGEMENT

SUPPLEMENTARY EXAMINATION PAPER 2017

TITLE OF PAPER : WATER RESOURCES MANAGEMENT II

COURSE CODE : EHM 419

DURATION : 2 HOURS

MARKS : 100

INSTRUCTIONS :

- : READ THE QUESTIONS & INSTRUCTIONS CAREFULLY
- : ANSWER **ANY FOUR** QUESTIONS
- : EACH QUESTION **CARRIES 25** MARKS.
- : WRITE NEATLY & CLEARLY
- : NO PAPER SHOULD BE BROUGHT INTO OR 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 reasons why it is important to determine population projection in water resources management. **[10 Marks]**
- b. Give five examples that demonstrate disadvantage of long term population forecasts **[10 Marks]**
- c. If at average a woman give birth to two children what is the fertility rate? **[5 Marks]**

QUESTION TWO

- a. Explain the four guiding principles adopted in Dublin Reo conference (1992) to prevent or reverse trends of overconsumption, pollution and rising threats from droughts and floods. **[10 Marks]**
- b. Explain five reasons why water cannot be provided for free yet water is known to be a basic human right? **[10 Marks]**
- c. Mention precaution that ought to be taken into consideration when pricing water services **[5 Marks]**

QUESTION THREE

- a. Estimate the percentage of the highest consumer of water resources worldwide and mention the consumer **[2 Marks]**
- b. Explain five reasons why should an Environmental Health Officer and Water Manager have a basic knowledge of basic components making up agricultural water requirements? **[10 Marks]**
- c. You are asked to decide on a dispute of water allocation, in a nutshell what are five points you will consider in solving the problem and why? **[13Marks]**

QUESTION FOUR

1. A family has not more than E100.00 per month to spend on water bills. At present at present the family pays E70.00.
 - a. Do you expect their reaction to a price increase of 10% to be elastic or rigid? Give reason(s) for your answer. **[5 Marks]**
 - b. A few years later after a number of price increases, the amount of money the family is paying amount to E100.00 per month. If the price is again

increased by 10% how do you expect their reaction with regards to water demand to be? Explain your answer. **[5 Marks]**

2. Describe the purpose of irrigation and precaution to be taken when irrigating maize field. **[5 Marks]**
3. What are five conditions that must be satisfied for Maximum Evapotranspiration (ET_m) to occur in a maize field? **[5Marks]**
4. There are two sources of water available in the field, name these sources and which one of the sources you mention can be influenced by man?

[5 Marks]

Total Marks: 25

QUESTION FIVE

Write about water pricing as an important element and key instrument for the implementation of demand management in water resources management. In your writing fully describe four elements of water pricing that can be used in equity water allocation.

(25 Marks)