

# MASENO UNIVERSITY UNIVERSITY EXAMINATIONS 2016/2017

SECOND YEAR FIRST SEMESTER EXAMINATIONS FOR THE DEGREE OF BACHELOR OF SCIENCE IN FISHERIES AND AQUACULTURE AND BACHELOR OF SCIENCE IN AQUATIC RESOURCES CONSERVATION AND DEVELOPMENT WITH INFORMATION TECHNOLOGY

## MAIN CAMPUS

## **AFN 203: AQUATIC POLLUTION**

Date: 8th December, 2016

Time: 12.00 - 3.00 pm

### INSTRUCTIONS:

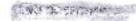
- Answer ALL questions in SECTION A and in SECTION B answer any other THREE questions.
- Illustrate your answers with well labeled diagrams where appropriate.

ISO 9001:2008 CERTIFIED



#### Section A: Answer ALL questions from this section (40 marks)

- 1. Define the following terminologies
  - a) Ghost fishing (2marks)
  - b) Volatilization (2 marks)
- Outline any FOUR reasons why toxic organic pollutants are considered a major threat to aquatic ecosystems (4 marks)
- In order for biomagnification to occur, a pollutant must fulfill FOUR conditions.
   Outline these conditions. (4 marks)
- Indicate any FIVE ways in which recycled wastewater can be re-used within an urban setting. (5 marks)
- a). Briefly describe the TWO methods used in measuring the quality of water (levels of pollution) in the aquatic environment. (2marks)
  - b) List THREE natural processes through which wastewater is rendered less harmful to the environment once it enters the aquatic system (3 marks)
- Highlight THREE major reasons that have led to the production release of Persistent Organic Pollutants into the environment. (3marks)
- a). Explain why suspended contaminants and bacterial impurities are not regarded as serious threats in groundwater pollution. (2 marks)
  - b). Give TWO reasons why treatment of polluted underground water through natural the processes is slow compared to surface waters. (2 marks)
- Highlight the TWO major components of a typical septic tank system used in treating of domestic wastewater (2 marks)
- Briefly describe THREE methods that are commonly used to disinfect treated wastewater before it is released into the natural environment. (6 marks)
- Outline THREE main reasons which have made plastics to be considered a major concern as an aquatic pollutant (3 marks)



## Section B: Answer any THREE questions from this section (30marks)

- With the help of appropriate diagram(s), discuss the major types of constructed wetlands, based on water flow conditions (10marks)
- Discuss the different methods of secondary wastewater treatment that are commonly used in industrial and municipal treatment plants (10 marks)
- Describe any FIVE statutory control measures and guiding principles that can be adopted by governments and pollution regulators to ensure effective mitigation of aquatic pollution (10 marks)
- Discuss the major effects of aquatic thermal pollution on the biota of the receiving aquatic environment (10 marks)

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