

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF SCIENCE IN ENVIRONMENTAL SCIENCE

ENSC 443: WATER AND SANITATION

STREAMS: BSC (ENSC) Y4S1

TIME: 2 HOURS

DAY/DATE: TUESDAY 03/12/2019

8.30 AM – 10.30 AM

INSTRUCTIONS:

- Answer all Questions in Section A and any other Two in Section B
- Do not write anything on the question paper

SECTION A: 30 MARKS

1. Based on the water cycle, explain the possible channels of water that lands on the ground surface. [6 marks]
2. Explain how human developments may impact the water cycle. [5 marks]
3. Outline the fundamental principles of ecological sanitation. [3 marks]
4. Write short notes on the following terms as used in water and sanitation.
 - (a) Oxygen demand [2 marks]
 - (b) Algal bloom [2 marks]
 - (c) Fluorosis [2 marks]
5. Outline four methods used in disinfecting drinking water at the tertiary stage of water. [4 marks]
6. Highlight three bodies formed under the water Act of 2002 (revised in 2016) and indicate their functions. [6 marks]

SECTION B: 40 MARKS

7. (a) Discuss the characteristics that make water a unique natural resource and discuss whether or not you consider payment for water a useful management strategy.
[10 marks]
- (b) Explain why an integrated approach to water management is necessary.
[10 marks]
8. (a) Briefly discuss some of the challenges affecting the quality and quantity of water resources today. [10 marks]
- (b) Describe some of the technologies needed for drought-prone areas to attain a reasonable degree of self-sufficiency in terms of water supply and sanitation.
[10 marks]
9. (a) Discuss in details the main sectors involved in the exploitation of water resources in Kenya and indicate the interactions between these sectors. [10 marks]
- (b) You are the Water Resources Manager in the Upper Tana Catchment; describe how you would conduct a bioassessment exercise for water quality monitoring.
[10 marks]
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