

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

THIRD YEAR EXAMINATION FOR THE AWARD OF DEGREE OF SCIENCE IN ENVIRONMENTAL SCIENCE

ENSC 443: WATER AND SANITATION

STREAMS: BSC ENSC Y4S1

TIME: 2 HOURS

DAY/DATE: MONDAY 20/09/2021

8.30 A.M – 10.30 A.M

INSTRUCTIONS

Answer all in section A and any other two in section B

Do not write on the question paper

SECTION A (30 MARKS)

Q1. Using an illustration, describe the inflows and outflows in a hydrological cycle.

[6

marks]

Q2. Describe the characteristics of water resource crisis in Kenya. [6 marks]

Q3. Briefly describe the following;

(a) Flocculation [2 marks]

(b) Chemical Oxygen Demand [2 marks]

(c) Biological Oxygen Demand [2 marks]

Q4. Using the following hydrological data, calculate the river discharge. [6 marks]

Watershed area km^2	Surface runoff M^3	Subsurface flow M^3	Ground water flow M^3
20	200	70	1000

Q5. Describe the six principles of ecological sanitation. [6 marks]

SECTION B (40 MARKS)

Q6. Using an illustration, discuss the drinking water treatment system for a community water supply. [20 marks]

Q7. Discuss the major causes of water pollution and highlight the mitigation measures. [20 marks]

Q8. Discuss the role of different institutions in the management of water resources under the water act 2016 in Kenya. [20 marks]
