



KISII UNIVERSITY

UNIVERSITY EXAMINATIONS

SECOND YEAR EXAMINATION FOR THE AWARD OF THE DEGREE OF
BACHELOR OF SCIENCE IN PUBLIC HEALTH
SECOND SEMESTER 2022/2023
[JAN – APRIL, 2023]

PHES 217: WATER SUPPLY AND QUALITY CONTROL

STREAM: Y2 S2

TIME: 3 HOURS

DAY: MONDAY, 9:00 – 12:00 P.M.

DATE: 27/03/2023

INSTRUCTIONS

- 1. Do not write anything on this question paper.**
- 2. Answer ALL questions in section A and any other TWO in Section B.**

SECTION A(40MARKS)

1. Define the following terms

- | | |
|-----------------------------|---------|
| a) Pre-chlorination | (1mark) |
| b) Residue chlorine | (1mark) |
| c) Water pollution | (1mark) |
| d) Biological Oxygen Demand | (1mark) |
| e) Water surveillance | (1mark) |

2. All people have the right to have access to drinking water in quantities and a quality to their basic needs. But this access to water may be restricted in several ways. List these ways. (2 marks)
3. Differentiate between pre-chlorination and chlorination in conventional water treatment system (2 marks)
4. Water may be grouped under four categories . List the categories and mention various uses under each category. (2 marks)
5. Mention any four physical characteristics of water (2 marks)
6. Mention any four chemical characteristics of water (2 marks)
7. List four methods of water treatment at community level (2 marks)
8. Briefly explain any two reasons why it is necessary to remove hardness from water (4 marks)
9. “If you destroy nature, nature will destroy you” justify this statement (3 marks)
10. Water related infections are classified into four distinct water related mechanisms by which a disease may be transmitted from one person to another. Briefly explain these four transmission mechanisms. (8 marks)
11. Mention any six sources of water pollution (2 marks)
12. List main objectives of water treatment (4 marks)
13. List any two disadvantages of rain water (2 marks)

SECTION B (30MARKS)

1. Conventional large scale water treatment is preferred in urban setup.

Discuss in details the process followed from the water intake point until it reaches the consumer collection point. (15 marks)

2. Water quality control may be used to mean all the activities put in place to monitor, control and improve the quality of community water supplies.

a) Explain what is sanitary inspection of water sources (5 marks)

b) Explain procedures/steps of sampling water from a tap for biological analysis (10 marks)

3. Explain challenges facing GWASCO(Gusii Water and Sanitation Company) as a water service provider. What is the impact of insufficient supply of portable water in a busy urban set up. What can be recommended as a solution to the foresaid challenges. (15 marks)