

**W1-2-60-1-6**

**JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY**

**UNIVERSITY EXAMINATIONS 2016/2017**

**THIRD YEAR FIRST SEMESTER UNIVERSITY EXAMINATION FOR THE DEGREE OF BACHELOR OF PUBLIC HEALTH**

**ICH 2311 WATER SAFETY AND QUALITY CONTROL**

**DATE: DECEMBER, 2016 TIME: 2 HOURS**

**INSTRUCTIONS:**  ANSWER **SECTION A (COMPULSORY)** AND ANY OTHER

 ONE QUESTIONS FROM  **SECTION B**

**SECTION A : 48 MARKS**

1. a. Define the following terms as used in Water Safety and Quality.

 i. Water hardness. [2 marks]

 ii. Water treatment. [2 marks]

 iii. Water use. [2 marks]

2. Distinguish between:-

a. Grab and composite water samples. [2 marks]

b. Point and dispersed source pollutants. [3 marks]

c. Biochemical and chemical oxygen demand. [2 marks]

3. a. List any three (3) types of water quality standards. [3 marks]

b. Outline any three (3) disadvantages of the dead-end arrangement of pipeline for a water supply system. [3 marks]

4. a. Name any six (6) water born diseases. [3 marks]

b. State any three advantages of water harvesting. [3 marks]

5. a. Identify the three (3) zones of groundwater. [3 marks]

 b. List any three (3) methods of ………… of water. [3 marks]

6. a. Highlight any five (5) factors limit the availability of water in a given

 geographical area. [5 marks]

7. a. Explain any two (2) factors that influence each of the following

physical properties of water:-

i. Colour [2 marks]

ii. Taste [2 marks]

iii. Odour [2 marks]

8. a. A solution has 1kg of magnesium chloride dissolved in one liter of

water. What is the concentration of this solution in parts per million (PPM). [4 marks]

b. Outline three (3) types of water. [3 marks]

**SECTION B: 22 MARKS**

9. a. Discuss the gender aspect of water supply. [12 marks]

 b. Highlight the benefits of water recycling. [10 marks]

10. a. Explain the membrane filter method of determining the concentration

of coliforms in water. [10 marks]

 b. Outline the main stages of water treatment highlighting the

 importance of each to Public health. [12 marks]

11. a. Identify and explain the different classes of stream or surface water. [10 marks]

 b. Discuss any six (6) stormwater quality control techniques. [12 marks]