



**JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY**  
**SCHOOL OF HEALTH SCIENCES**  
**UNIVERSITY EXAMINATION FOR DEGREE OF BACHELOR OF SCIENCE**  
**PUBLIC HEALTH / COMMUNITY HEALTH AND DEVELOPMENT**  
**2<sup>ND</sup> YEAR 1<sup>ST</sup> SEMESTER 2022/2023 ACADEMIC YEAR**  
**MAIN CAMPUS**

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**COURSE CODE: HCB 1206**

**COURSE TITLE: WATER SUPPLY AND QUALITY CONTROL**

**EXAM VENUE:**

**STREAM: (BSc. Env. Hlth)**

**DATE:**

**EXAM SESSION: DECEMBER 2022**

**TIME: 2.00 HOURS**

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**Instructions:**

- 1. Answer all the questions in Section A and 2 questions in Section B.**
- 2. Candidates are advised not to write on the question paper.**
- 3. Candidates must hand in their answer booklets to the invigilator while in the examination room.**

## **SECTION A [30 MARKS]**

**Answer ALL questions from this Section.**

1. Define the following process of movement of water on the earth surface.
  - a. Percolation
  - b. Runoff (4mrks)
2. Mention various sources of water in village/town used for drinking/domestic purpose (6mrks)
3. Name and explain stages involved in treating a highly turbid water in a water treatment plant? (6 marks)
4. Discuss the effects of water pollution to man (4 marks)
5. Mention types of distribution system in water supply system. (4 marks)
6. Briefly describe 3 appurtenances/structures necessary in the flow of water from the production plant to the hospital kilometres away. (6 marks)

## **SECTION B: ANSWER QUESTION ONE (1) AND ANY OTHER QUESTION (40 MARKS)**

### **Question 1**

- a) Describe 3 stages of extraction of ground water (10mrks)
- b) Discuss the characteristics of an aquifer (10 marks)

### **Question 2**

Discuss treatment process of water from the intake to the distribution reservoirs (consider a fresh water lake) (20 marks)

### **Question 3**

- a) By giving examples discuss biological, physical and chemical parameters of a quality water for a community consumption (10 marks)
- b) Water sources are polluted through human activities, highlight agents of water pollution (10 marks)

### **Question 4**

- a) For efficient distribution, it is required that water should reach end use with required flow rate with needed pressure in the piping system. There are three main types of distribution system that can be adopted in villages/towns. Discuss the three types of water distribution system. (15 marks)
- b) Briefly discuss components of a distribution line from the storage tank to residential. (5 marks)