



**JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY
SCHOOL OF HEALTH SCIENCES**

**DEC, 2018 UNIVERSITY EXAMINATION FOR THE DEGREE OF BACHELOR OF
SCIENCE IN COMMUNITY HEALTH AND DEVELOPMENT/PUBLIC HEALTH
3RD YEAR 2ND SEMESTER 2018 ACADEMIC YEAR**

NAMBALE

COURSE CODE: HCD 3324

COURSE TITLE: COMMUNITY WATER SUPPLY AND SANITATION

EXAM VENUE: STREAM: (BSc Comm Hlth & Dev/Public Health)

DATE: EXAM SESSION:

TIME: 2.00 HOURS

Instructions:

- 1. Answer all the questions in Section A and ANY other 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. ANSWER ALL QUESTIONS (30 mrks)

1. Explain functions of the national water service boards in Kenya. (3 mrks)
2. Distinguish the processes of sedimentation and filtration in water treatment plant. (3 mrks)
3. Highlight three factors to consider in selecting a borehole water supply (3 mks)
4. Compare and contrast borehole and spring water supply systems. (3 mks)
5. Outline advantages and disadvantages attributable to (a) rain water (b) upland surface water and (c) underground water. (3 mrks)
6. Name six common types of water filters used in communities. (3 mks)
7. Enumerate six major water resource catchment areas in Kenya. (3 mrks)
8. State at least three elements determining density of water. (3 mrks)
9. Elaborate how temperature affects the anaerobic process in water treatment. (3 mrks)
10. Describe how water contributes to the development and transmission of cholera, scabies and schistosomiasis. (3 mrks)

Section B. ANSWER ANY TWO QUESTIONS (20 mrks each)

11. Discuss;
 - (a) the physiological significance of water to humankind and relevance of its quality to public health. (8 mrks)
 - (b) the principles of integrated water resource management. (6 mrks)
 - (c) factors influencing the selection and planning for community water supply. (6 mrks)
12. Discuss the process of Eutrophication, citing ecological impacts, main effects arising from ecological impacts, point sources and non-point sources, and prevention and reduction policies that would be applicable. (20 marks)
13. With the aid of well illustrating diagrams discuss;
 - (a) the process of hydrologic water cycle. (7 mrks)
 - (b) the conventional wastewater treatment plant system. (6½ mrks)
 - (c) a cycle of a classical water-borne disease infection. (6½ mrks)
14. Discuss;
 - (a) the objectives of primary, secondary and tertiary stages in water treatment. (6 mrks)
 - (b) the relevance of hierarchy of water needs with seven specific uses of water. (7 mrks)
 - (b) how human activities affect water cycle with seven specific examples. (7 mrks)