



MACHAKOS UNIVERSITY COLLEGE

(A Constituent College of Kenyatta University)
University Examinations for 2015/2016 Academic Year

SCHOOL OF PURE AND APPLIED SCIENCES

DEPARTMENT OF BIOLOGICAL SCIENCES

FIRST SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF
SCIENCE IN POPULATION HEALTH

HEH 215: WATER QUALITY SUPPLY AND DISEASE PREVENTION

DATE: 5/8/2016

TIME: 8.30-10.30 AM

INSTRUCTIONS:

**ANSWER QUESTION ONE IN SECTION A AND ANY OTHER TWO QUESTIONS
IN SECTION B**

SECTION A (30 MARKS- COMPULSORY QUESTION)

1. a) Briefly explain three ways of water treatment at the household level (3 marks)
- b) Briefly explain the limitations of water harvesting for rural communities (3 marks)
- c) Using the hydrological cycle, explain the point at which water may be contaminated (3 marks)
- d) Explain two methods of controlling point source of water pollution (2 marks)
- e) Briefly describe water supply options you would consider for a community (3 marks)
- f) Explain the factors that determine water demand in a community (3 marks)
- g) Explain the advantage of rain water (3 marks)

- h) Describe three key outcomes envisaged in the sustainable development goal six (SDG 6) as a result of improving access to water for women (3 marks)
- i) Using appropriate examples, explain how waterborne diseases are transmitted (2 marks)
- j) Outline the essential steps in obtaining a sample of water from a tap for bacteriological analysis (3 marks)
- k) Explain two approaches which can be applied to prevent possible contamination of well water during routine use (2 marks)

SECTION B (CHOOSE ANY TWO)

- 2. Discuss the steps taken when drilling a borehole (20 marks)
- 3. a) Discuss the principle of integrated water resources management (10 marks)
b) Explain the steps used in conventional water treatment (10 marks)
- 4. a) Discuss gender aspects and issues of water supply, hygiene and sanitation in Kenya (10 marks)
b) Discuss the roles of an ideal water supply committee for a community water resource (10 marks)
- 5. a) Explain the functions and roles of Kenya's water service boards (5 marks)
b) Discuss the physical, biological and chemical characteristics of water (15 marks)