



KENYATTA UNIVERSITY

UNIVERSITY EXAMINATIONS 2017/2018

FIRST SEMESTER EXAMINATION FOR THE DEGREE OF
BACHELOR OF SCIENCE (ENVIRONMENTAL HEALTH) AND
BACHELOR OF SCIENCE (POPULATION HEALTH)

HEH 215: WATER QUALITY AND DISEASE CONTROL

DATE: Monday, 29th January 2018

TIME: 2.00 p.m. - 4.00 p.m.

INSTRUCTIONS:

(PART A - for students taking BSc. in Environmental Health)

SECTION A: (COMPULSORY) - Answer ALL questions in this section

1.
 - (a) Distinguish between potable and clean water. (2 marks)
 - (b) State physical characteristics of water. (3 marks)
 - (c) Explain the qualities of clean water. (4 marks)
 - (d) Explain the following terms as used in water quality and supply
 - (i) Turbidity (1 mark)
 - (ii) Dissolved solids (1 mark)
 - (iii) Suspended particles (1 mark)
 - (iv) Sedimentation (1 mark)
 - (v) Biochemical oxygen demand (1 mark)
 - (e) Outline the water quality parameters. (2 marks)
 - (f) Identify the organoleptic tests used in determining water quality. (2 marks)
 - (g) Compare and contrast between sterilization and purification of water. (2 marks)

SECTION B: Answer question TWO and any other TWO questions in this section

2. Water pollution is quite common in developing countries and contributes about 80% of all the water related diseases. Discuss in details
 - (a) Different water treatment methods that can be used in curbing the problem. (10 marks)

INVOLVEMENT IN ANY EXAMINATION IRREGULARITY SHALL LEAD TO DISCONTINUATION

- (b) Describe different kinds of water related diseases which can effect population in those developing countries. (10 marks)
3. (a) Discuss the major causes of diarrhoea diseases associated to water quality and supply giving examples (9 marks)
- (b) Explain the major diseases caused by shortage of water supply in an area. (6 marks)
4. (a) Water quantity precedes water quality in many instances in developing countries. Justify the statement above; giving relevant examples (10 marks)
- (b) Explain the importance of carrying out various water tests in a community water supply (5 marks)
5. Flora and Fauna cannot survive without water. Discuss the above statement in details (15 marks)

(PART B - for students taking BSc. in Population Health)

SECTION A: Answer ALL questions in this section

1. (a) Define the following terms:
- (i) filtration
 - (ii) Aeration
 - (iii) Dilution
 - (iv) Porosity (4 Marks)
- (b) State the biological properties of water and its significance in humans. (4 Marks)
- (c) In most communities in the developing world, water for domestic is collected from various unprotected sources and require treatments; State any four domestic treatments of water. (4 Marks)
- (d) Briefly explain water catchment protection as one way of avoiding water contamination. (4 Marks)
- (e) Briefly describe water handling at user point. (4 Marks)

SECTION B: Answer question 2 and any other 2 questions in this section

2. (a) You, as a member of county health team, are participating in water supply workshop. Explain the hydrologic cycle. (10 Marks)
- (b) Sketch the river bed intake. (5 Marks)
3. (a) With illustration, explain a well managed spring. (12 Marks)
- (b) Identify any five areas of water usage. (5 Marks)
4. (a) You, as an official of the health team, are approached by some community members to educate them on roof harvesting; Explain how you would estimate water supply for a modest family given an average annual rainfall of 2,500 mm, receiving rain water supply from the following sources:-
- (i) Galvanized iron roof with an area of 60 square meters
- (ii) Grass thatched roof with an area of 40 square meters. (12 Marks)
- (b) Enumerate any three vector-related diseases, stating the vector involved in each case. (3 Marks)
5. Describe the techniques of water purification, stating any four notable sources of impure water supply. (15 Marks)

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