



# MERU UNIVERSITY OF SCIENCE AND TECHNOLOGY

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UNIVERSITY EXAMINATIONS 2023/2024

SECOND YEAR SECOND SEMESTER EXAMINATION FOR THE DEGREE OF  
BACHELOR OF SCIENCE IN HEALTH SYSTEM MANAGEMENT

**NNH 3252: PRINCIPLES OF ENVIRONMENTAL HEALTH**

**DATE: APRIL 2024**

**TIME: 2 HOURS**

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**INSTRUCTIONS: ANSWER QUESTIONS ONE AND ANY OTHER TWO**

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**QUESTION ONE (30 MARKS)**

- a) State impact of climate change on environmental health and the importance in health systems (2 marks)
- b) Illustrate the three interacting factors of disease causation in the epidemiologic triad and identify three interventions that curb emergence of diseases at each interacting factor (6marks)
- c) State two treatment options for final disposal of hazardous waste in a healthcare facility (2 marks)
- d) The quality of food deterioration due to three major chemical reactions of the constituents of food. Explain. (6marks)
- e) Giving examples, state four types of Water-associated Diseases (8 marks)
- f) State the six functional elements of solid waste management (6 marks)

**QUESTION TWO (20 MARKS)**

- a) Bradley classification of water-related diseases advocates for control strategies that are dependent on transmission route rather than targeting a single disease. Discuss (8 Marks)
- b) Despite efforts in improving water and sanitation, water associated diseases still remains a huge burden in Africa. Briefly explain (4 Marks)

- c) Explain the correlation of sanitary chemical analysis with quality of water (4 Marks)
- d) Describe the two types of chemical analysis as applied in testing water quality (4 marks)

### QUESTION THREE (20 MARKS)

Infestation of rats has been reported in the hospital kitchen store. As a health manager you are worried of possible outbreak of zoonotic diseases if mitigation is not prompt.

- a) Explain two mechanisms by which diseases transmission by the rats could occur in the health facility (4 marks)
- b) Applying the integrated vector management strategy, describe your prevention management plan as a health manager (6 marks)
- c) A survey in a rice growing community indicates that the prevalence rate of bilharzia is above the national average by 20%.
  - i. State water and sanitation associated factors that could be leading this alarming rate (4 marks)
  - ii. Using Bradley approach describe three preventive measures that can be applied prevent and control bilharzia in this community (6 marks)

### QUESTION FOUR (20 MARKS)

You are in a hospital health committee that is mandated to come up with implementation plan of an ultra-modern mortuary. The team has decided to acquire an environmental impact assessment certificate before engaging other services.

- i. Explain four reasons that justify the team's decision to acquire environmental impact assessment (8marks)
- ii. The environmental consultant has recommended a "screening" and "scoping" as initial steps in this process. What is the purpose of screening and scoping this context environmental (6 marks)
- iii. State all the components that will be included in the fianl impact assessment report? (6 marks)