



# MACHAKOS UNIVERSITY

University Examinations 2016/2017

SCHOOL OF HEALTH SCIENCES

DEPARTMENT OF PUBLIC HEALTH

FIRST YEAR SECOND SEMESTER EXAMINATION FOR BACHELOR OF SCIENCE  
(POPULATION HEALTH)

**HEH 104: BASICS IN ENVIRONMENTAL MICROBIOLOGY**

**DATE:**

**TIME:**

---

## INSTRUCTIONS

*This paper consists of two sections A and B*

*Section A is compulsory*

*Section B choose any two (2) questions*

*Illustrate your answers with neat, clear and well labelled diagrams where appropriate*

## SECTION A (30 MARKS) COMPULSORY

### QUESTION ONE

- a) Distinguish between the following terms
  - i. Microbes and macrophages (2 marks)
  - ii. Protozoa and bacteria (2 marks)
- b) Explain sources of bacteria in an environment giving relevant examples of bacteria (4 marks)
- c) Explain how Control and prevention of bacterial diseases can be carried out in a community (4 marks)
- d) Host and agent (3 marks)
- e) Explain three(3) microorganisms used in food industries (3 marks)
- f) Classify micro-organisms into three (3) broad classes (3 marks)

- g) Outline three (3) benefits of micro-organism to humans (3 marks)
- h) Explain three (3) factors that promote microbial decline (3 marks)
- i) Describe how identification of microbes can be achieved (3 marks)

**SECTION B: CHOOSE ANY TWO (2) QUESTIONS. EACH QUESTION IS 20 MARKS**

**QUESTION TWO**

- a) Explain the importance of micro-organism in a food industry (10 marks)
- b) Describe the applicability of Microbiology in a community (10 marks)

**QUESTION THREE**

- a) Discuss host parasites relationship in the environment (15 marks)
- b) Distinguish between disinfection and sterilization (5 marks)

**QUESTION FOUR**

Using a diagram, discuss the factors promoting microbial growth (20 marks)

**QUESTION FIVE**

- a) Describe the relationship between the microorganisms and health (10 marks)
- b) Discuss ways in which you can prevent entry of micro-organisms into the human body (10 marks)