



ZIMBABWE

**MINISTRY OF HIGHER AND TERTIARY EDUCATION,
INNOVATION, SCIENCE AND TECHNOLOGY DEVELOPMENT**

**HIGHER EDUCATION EXAMINATIONS COUNCIL
(HEXCO)**

NATIONAL CERTIFICATE

IN

ENVIRONMENTAL HEALTH

MODULE: Microbiology for Environmental Health Technicians PAPER NO: 605/23/M01

DURATION: 3 hours

MAY/JUNE 2024 EXAMINATION

REQUIREMENTS

Pencil

INSTRUCTIONS TO CANDIDATE

- 1. Answer any five (5) questions.**
- 2. Each question carries 20 marks.**
- 3. Do not write your name on the answer booklet.**

PAPER NO: 605/23/M01 – MICROBIOLOGY FOR ENVIRONMENTAL HEALTH TECHNICIANS

QUESTION 1

- a) Describe the objectives of food hygiene. (10 marks)
- b) State the differences between high risk and low risk foods. (10 marks)

QUESTION 2

Describe factors that affect the growth of microorganisms. (20 marks)

QUESTION 3

- a) Draw a well-labelled diagram of a prokaryotic cell. (7 marks)
- b) State the functions of the following organelles:
- i) Mitochondria (3 marks)
 - ii) Endoplasmic reticulum (4 marks)
- c) Describe the factors that influence infection. (6 marks)

QUESTION 4

- a) Describe the contributions of Robert Koch in the study of microbiology. (8 marks)
- b) Population of bacterial is influenced by reproduction. Describe different ways in which bacteria reproduce. (12 marks)

QUESTION 5

- a) Describe the different modes of action of antibiotics. (10 marks)
- b) Write short notes on the following:
- i) Autoclaving (3 marks)
 - ii) Dry heat (3 marks)
 - iii) Ionising radiation (4 marks)

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QUESTION 6

Discuss the following:

- | | | |
|----|--------------------------------|-----------|
| a) | non-acquired immunity | (6 marks) |
| b) | Naturally acquired immunity | (7 marks) |
| c) | Artificially acquired immunity | (7 marks) |

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