



MERU UNIVERSITY OF SCIENCE AND TECHNOLOGY

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UNIVERSITY EXAMINATIONS 2024/2025

SECOND YEAR, FIRST SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR
OF SCIENCE IN PUBLIC HEALTH

HPP 3215: MICROBIOLOGY

DATE: JANUARY 2025

TIME: 2 HOURS

INSTRUCTIONS: Answer Question ONE and any other TWO questions.

QUESTION ONE (30 MARKS)

- Name four gastrointestinal viruses that are associated with diarrhea in adults. (4 Marks)
- Outline the procedure of inoculating butt and slant. (4 Marks)
- Summarize the mode of action of the cholera toxin. (4 Marks)
- Describe two types of warts. (4 Marks)
- Enumerate clinical forms of *Treponema pallidum* infections. (4 Marks)
- Distinguish between enrichment and selective culture media. (4 Marks)
- Describe the morphology and staining properties of the three (3) leading causes of bacterial meningitis. (6 Marks)

QUESTION TWO (20 MARKS)

Discuss the potential uses of genomics in routine and specialized testing of infectious diseases, including the challenges in service delivery. (20 Marks)



MUST is ISO 9001:2015 and



ISO/IEC 27001:2013 CERTIFIED

QUESTION THREE (20 MARKS)

A farmer was pierced by a nail and within a few days he developed tissue necrosis and gas gangrene

- a) Name the most likely causative organism. (2 Marks)
- b) Explain systematically how you can isolate and identify the organism (18 Marks)

QUESTION FOUR (20 MARKS)

You have been provided with a pus swab from a wound of a patient suspected to be diabetic, on gram stain, numerous gram positive big oval cells with some showing signs of budding are seen.

- a) Starting from the swab, describe how you would isolate and identify the suspect pathogen culturally. (12 Marks)
- b) Discuss the success of dimorphic fungi as potential pathogens citing two (2) dimorphic and two (2) true yeasts. (8 Marks)

