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COMMUNITY HEALTH LEVEL 6

HE/OS/CH/CC/05/6

Apply Basic Microbiology and Parasitology

November/December 2025

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**TVET CURRICULUM DEVELOPMENT, ASSESSMENT AND CERTIFICATION
COUNCIL (TVET CDACC)**

WRITTEN ASSESSMENT

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TIME: 3 HOURS

INSTRUCTIONS TO CANDIDATE

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1. This paper consists of **TWO** sections: **A** and **B**.
2. Answer **ALL** questions in section A.
3. Answer **ANY THREE (3)** questions in Section B.
4. Marks for each question are indicated in the brackets.
5. Candidates are provided with a separate answer booklet.
6. Do not write on the question paper.

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This paper consists of THREE (3) printed pages.

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Candidate should check the question paper to ascertain that all pages are printed as indicated and that no questions are missing.

SECTION A (40 MARKS)

Attempt ALL questions from this section.

1. Trypanosomes are protozoan parasites transmitted by tsetse flies. Highlight FOUR signs and symptoms of African trypanosomiasis (sleeping sickness). (4 Marks)
2. Leprosy is a chronic bacterial infection caused by *Mycobacterium leprae*. Outline FOUR signs and symptoms of leprosy. (4 Marks)
3. Mutualism is a symbiotic relationship where both organisms benefit. Outline THREE examples of mutualistic associations in humans. (3 Marks)
4. Bacteriology, a branch of microbiology, deals with the study of bacteria. Identify FOUR benefits of studying bacteriology in community health. (4 Marks)
5. In laboratory diagnosis, specimen integrity is essential for accurate results. Identify FOUR methods of preserving specimens before analysis. (4 Marks)
6. Tapeworms (*Taenia* species) are intestinal parasites acquired from undercooked meat. Outline FOUR signs and symptoms of taeniasis. (4 Marks)
7. Helminths are parasitic worms that cause morbidity in human populations. Identify THREE organs where helminths commonly establish infection. (3 Marks)
8. Measles is a highly contagious viral disease marked by fever and rash. Enumerate THREE other viral diseases preventable by immunization. (3 Marks)
9. Gonorrhoea is a bacterial infection spread through sexual contact. Highlight THREE signs and symptoms of gonorrhoea. (3 Marks)
10. Dengue fever is a mosquito-borne viral disease-causing outbreaks in tropical regions. State FOUR preventive measures against dengue transmission. (4 Marks)
11. Actinomycetes are a group of fungi-like bacteria found in soil. Outline FOUR beneficial effects of actinomycetes. (4 Marks)

SECTION B (60 MARKS)

Attempt any THREE questions in this section, all questions carry equal marks.

12. Assistant Community Health officers in the Bomani Community Health unit are conducting door-to-door sensitization after dysentery outbreak was identified to be a major concern in the community.

a. Highlight FOUR symptoms of dysentery. (4 Marks)

b. Explain FOUR predisposing risk factors that might have exposed the population of the Bomani community health unit to dysentery. (8 Marks)

c. Describe FOUR control measures to prevent spread of the disease in the Bomani community health unit. (8 Marks)

13. Microbial growth results in an increase in microorganism size and population. Bacteria require optimum conditions for growth, and these increase their infectivity in their host.

a. Draw a well-labeled diagram of a bacterial cell. (5 Marks)

b. Explain the FOUR growth phases of bacteria (8 Marks)

c. Identify FOUR factors affecting microbial growth. (4 Marks)

d. Identify THREE industrial applications of fungi. (3 Marks)

14. Parasites have adapted survival mechanisms in hosts resulting in diseases. Parasitic infections can occur through ingestion, inhalation, or contact with contaminated food, water, soil, or vectors.

a. Using examples, discuss FIVE types of hosts in parasitology (10 Marks)

b. Discuss FIVE challenges faced in the diagnosis of parasitic infections. (10 Marks)

15. Hepatitis viruses cause liver infections posing a global concern. The Ministry of Health is spearheading efforts with community health workers to control and prevent such contagious viral infections.

a. Analyze FIVE risk factors contributing to hepatitis transmission in Kenya. (10 Marks)

b. Viruses only thrive in living host cells where they replicate. Discuss FIVE stages of viral replication. (10 Marks)