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COMMUNITY HEALTH LEVEL 6

HE/OS/CH/CC/05/6

Apply Microbiology and Parasitology

July/August 2025

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

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WRITTEN ASSESSMENT

Time: 3 HOURS

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INSTRUCTIONS TO CANDIDATE

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1. This paper consists of **TWO** sections: **A** and **B**.

2. Attempt **ALL** questions in section **A**.

3. Attempt 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 FOUR (4) printed pages
Candidates 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 in this Section

1. During diagnosis, the laboratory tests identify pathogenic bacteria based on their shape and staining ability. Categorize bacteria based on the FOUR main types of shape of the cells. [4 Marks]

2. Microbiological examination of specimens using a microscope can be a wet or dry preparation. Differentiate between wet and dry microbiological specimen preparation, providing an appropriate example for each case. [4 Marks]

3. In your home visits, you find a mother whose child is suffering from diarrhoea, and she thinks it is corona virus. You have the task of explaining to her the categories of disease-causing microorganisms. Identify THREE features that are used to categorize microorganisms. [3 Marks]

4. During your service delivery visits to members of your community health unit, you notice several cases of severe worm infestation in children. Educate the mothers on FOUR signs and symptoms of parasitic infestation. [4 Marks]

5. Microorganisms have optimal environmental conditions that favour their growth, making the disease caused by the microorganism common in places with those environmental conditions. Summarize THREE environmental conditions that influence the growth of microorganisms. [3 Marks]

6. The different types of microorganisms vary in the mode of reproduction. Viral infections spread quickly since they reproduce by replication using the host cell's mechanism. State THREE stages involved in viral reproduction. [3 Marks]

7. Pathogens tend to affect certain organs or parts of the body, and this is used to classify diseases. In each of the following diseases, identify ONE causative pathogen. [4 Marks]

- a) Gastrointestinal disease
- b) Skin disease
- c) Blood infection
- d) Respiratory tract infection

8. A generalized infection elicits certain signs or symptoms in the diseased organism. In each of the following, identify ONE disease characterized by blood infection by: [4 Marks]

- a) Bacteria
- b) Virus

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c) Fungi

d) Parasite

9. Disease transmission refers to the process by which an infectious agent, like a virus or bacteria, is passed to a person from a person, animal, or object, leading to the spread of a disease. Distinguish between vertical and horizontal disease transmission using appropriate examples. [4 Marks]

10. Parasites can be categorized based on where they are found in the host. Distinguish between endoparasites and ectoparasites, identifying appropriate examples. [4 Marks]

11. Distinguish between Gram-positive and Gram-negative bacteria by their staining ability. [3 Marks]

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SECTION B (60 MARKS)

Attempt Any THREE Questions in this Section

12. The primary school in your community is experiencing an outbreak of a skin disease, and you have been called to assist. Address the school management regarding the importance of assessing the risk factors within the school community as follows:

a) Categorize the types of risk factors likely to be at play in the disease outbreak above, highlighting TWO examples for each category. [12 Marks]

b) Explain FOUR ways to prevent the spread of the disease in the school community. [8 Marks]

13. Following the onset of the rainy season, mosquitoes have become a menace in Village X with an eruption of malaria cases. Numerous pools of stagnant water are scattered across the village. You have been appointed to lead the community members in initiating malaria outbreak control and prevention measures.

a) Construct the chain of infection, clearly explaining each component. [12 Marks]

b) Categorize THREE approaches you will use to control the disease. [6 Marks]

c) Recommend ONE measure of control you will apply in the case where a human is the reservoir. [2 Marks]

14. A youth advocacy group in your community had a heated argument where one of them claimed that HIV can be transmitted through shaking hands. You were invited to their next session to shed light on the matter, and you plan to conduct a health talk on disease transmission.

a) Elaborate on FOUR routes of disease transmission that you will educate the youth on, stating an example of a disease in each case. [12 Marks]

b) Differentiate between sign and symptom. [4 Marks]

c) Expound on TWO vital signs that the youth can observe to determine the presence of a disease. [4 Marks]

15. In a community dialogue day, a member of the community wants to know why bacteria are the most common pathogens. As the attendant Community Health Worker, you are tasked with responding to this concern.

a) Relate the rate and mode of reproduction to pathogenicity [2 Marks]

b) Explain the reproduction of bacteria by binary fission. [8 Marks]

c) Explain the growth of bacteria population using an appropriate illustration. [10 Marks]