

CHUKA UNIVERSITY

**FOURTH YEAR EXAMINATION BMET 451 : DIAGNOSTIC MICROBIOLOGY AND
PARASITOLOGY**

STREAM: Y4S1BSc. BIOMEDICAL SCIENCE

TIME: 2 HOURS

INSTRUCTIONS

- i. **Answer Question One and any other Two Questions**
- ii. **Do not write on the question paper**

Question One (30 marks)

- a. Explain in detail the general approach to the diagnosis of a bacterial infection. (5 marks)
- b. For a virus that does not produce a cytopathic effect (CPE), What are the other techniques that can be used to detect it. (5 marks)
- c. Briefly describe the laboratory approach to presumptive fungal identification. (3 marks)
- d. Elucidate how hybridization can be used in detection of membrane immobilized sequences in detection of parasitic infections (7 marks)
- e. Briefly describe how probes can be used for the detection of helminthes infections (6 marks)
- f. Briefly describe the nucleic acid based methods for detection of bacterial infections. (4 marks)

Question Two (20 marks)

- a. Describe in detail at least five tests that can be used in DEFINITIVE identification of virus grown in cell culture. (10 marks)
- b. What are the various tests that can be used for the identification of an organism with known anti serum (10 marks)

Question Three (20 marks)

- a. Explain in detail the various types of bacterial cultures that can be used for diagnosing specific bacterial infections (10 marks)
- b. What are the various tests that can be used for the identification of an organism with known anti serum? (10 marks)

Question Four (20 marks)

- a. Explain the various uses of India Ink and gram stain in diagnosis of various fungal infections. (5 marks)
- b. Discuss the selection and inoculation of culture media for fungal diagnosis. (5 marks)
- c. Explain in detail the probes used for the diagnosis of various protozoan infections. (10 marks)