

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATION

RESIT/SPECIAL EXAMINATION

**EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF SCIENCE IN
BMET 334: MEDICAL BACTERIOLOGY AND MYCOLOGY**

STREAMS:

TIME: 2 HOURS

DAY/DATE: TUESDAY 02/11/2021

11.30 A.M – 1.30 P.M

INSTRUCTIONS

(i) Answer Question ONE and any TWO questions

(ii) Do not write on the question paper

QUESTION ONE (30 MARKS)

- (a) Discuss the use of the following methods in detection and identification of bacteria;
- (i) Schaeffer-Fulton test (3 Marks)
 - (ii) Optochin test (3 Marks)
 - (iii) Ziehl Neelsen staining method (3 Marks)
- (b) Discuss pathological effect of ergot alkaloids on human health. (8 Marks)
- (c) Using specific examples distinguish between differential and selective media used to culture bacteria. (6 Marks)
- (d) Minimum inhibition concentration (MIC) is used when accurate results are needed for clinical management of immunosuppressed patients. Describe experimental protocol for isolating *Helicobacter pylori* from patient and how to determine its MIC and MBC against ciprofloxacin tablet 500mg. (8Marks).

QUESTION TWO (20 Marks)

- (a) What are mycoses? (2 Marks)
- (b) Discuss pathogenesis and virulence of systemic mycoses. (7 Marks)
- (c) *Candida albicans* are responsible for more mycotic illness and cause great variety of mycoses than any other species of fungi.
- (i) List the clinical features associated with candidiasis. (5 Marks)
- (ii) Explain how candidiasis can be diagnosed and treated. (6 Marks)

QUESTION THREE (20 Marks)

Discuss *Mycobacteria tuberculosis* under the following headings;

- (a) Isolation and identification (6 Marks)
- (b) Virulence (6 Marks)
- (c) Pathogenesis (6 Marks)
- (d) Prevention (2 Marks)

QUESTION FOUR (20 Marks)

(a) List and describe all the disease conditions caused by *Streptococcus pyogenes*. (12 Marks)

(b) In 1858, Louis Pasteur observed budding yeast cells in the vats of good wine and rod-shaped bacteria cells in vats with sour wine. Give biotechnological basis for this observation and explain two techniques he devised to preserve beer and wine. (8 Marks)
