



"Investing in Africa's Future"

**COLLEGE OF HEALTH, AGRICULTURE & NATURAL SCIENCES
DEPARTMENT OF HEALTH SCIENCES
BACHELOR OF MEDICAL LABORATORY SCIENCES HONOURS**

**NSLS 404 MICROBIOLOGY II EXAMINATION
END OF SEMESTER EXAMINATIONS**

NOVEMBER 2020

LECTURER: DR E. MUGOMERI

DURATION: 24 HOURS

INSTRUCTIONS

Do NOT write your name on the answer sheet.

Answer (fully) any one question of your choice.

Begin your answer for each question on a new page.

Each full question carries 100 marks.

Font: Times New Roman, Font size 12, Line space: 2.0.

Credit is given for neat, well-written and lucid work.

1. A 10 year old boy reports to the outpatient department with a wound on top of the foot. The wound has not healed for three months despite antibiotic treatment, has pus and green colour. A swab from the wound is sent for laboratory investigations;
 - a) What laboratory procedures would you carry out on the wound swab to identify the possible causative organisms? (25).
 - b) Analyse virulence factors associated with causative organisms you mentioned in [a] above (25)
 - c) How could you explain why the wound is not healing (25)
 - d) Which laboratory procedures would you use to diagnose causative organisms for septicemia (25)

2. In the event where you are provided with a vaginal swab from a 50 year old woman complaining of itchiness, discharge and painful micturition for laboratory investigations;
 - a) What procedures would you carry out to identify the causative organisms? (25).
 - b) What virulence factors could be associated with causative organisms you mentioned in [a] above and what pathogenic mechanisms are associated with these virulence factors (25)
 - c) Which laboratory procedures and equipment would you use to diagnose bacterial vaginosis (25)
 - d) Citing possible bacterial isolates from the swab, how would you differentiate between a sexual transmitted infection and UTI? (25)

3. A 25 year old HIV positive man who has been coughing for the last two weeks visited the health care centre. After the collection of the sputum sample, a laboratory procedure for the causative organism was performed.
 - a) What procedures would you carry out using which equipment (25)
 - b) At what stage would you culture the sputum and what other tests would you perform to assist with the investigations on the sputum (25)
 - c) How would you carry out antibiotic sensitivity tests in this case (25)
 - d) In the event that the patient has pneumonia, what laboratory procedures would you carry out to isolate the causative organisms for pneumonia (25)

(100 marks)