"Investing in Africa's Future"

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

NSLS 205 BACTERIOLOGY PRACTICAL EXAMINATION

END OF SEMESTER EXAMINATIONS

NOVEMBER 2022

LECTURER: Mr G.B HLEREMA

DURATION: 3 HOURS

INSTRUCTIONS

1. Do not write your name on the answer sheet
2. Use Answer Sheets Provided
3. Begin your answer for Each Question on a New Page
4. Credit is Given for Neat Presentation

Answer all Questions

1. You have been provided with a wound swab labeled **SW1**.
   a) Prepare a gram stain and describe what you see on the slide.(5)
   b) Outline the further laboratory investigations, including culture, needed to identify the organism. (10).
   c) Name any 5 organisms that can cause wound infection, giving virulence factors associated with the organisms (5)
   d) Describe the principle behind the Gram staining technique (5)
   e) Explain the possible sources of the organism (s) on the wound swab (5)

2. You are provided with a urine sample labelled **BV2** from a 25-year old female with STI symptoms for laboratory investigation.
   a) Carry DAY1 laboratory investigations to identify the causative organism and describe in detail your procedures (20)

   b) Describe the procedure you would carry out on DAY 2 of this analysis (15)

   c) Name any 5 most common causes of bacterial UTI, explaining the virulence factors implicated for UTI (5).

   d) Explain the principle behind the following biochemical test :

      i) Catalase Test (1)
      ii) Indole Test (1)

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 identification for the identification of *Mycobacterium tuberculosis* was performed. You have been provided with the prepared slide **TB1** for examination.
   a) Carefully examine the slide and report your findings (5).
   b) Identify the staining procedure used and explain the principle of the test (5)
   c) Identify any other method for the diagnosis of *M. tuberculosis*? (1)
   d) Explain the precautions needed in the laboratory to avoid infection by *M. tuberculosis* (2)

Total 75 MARKS