



“Investing in Africa’s Future”

**COLLEGE OF HEALTH, AGRICULTURE AND NATURAL
SCIENCES**

**DEPARTMENT OF BIOMEDICAL AND LABORATORY SCIENCES
BACHELOR OF MEDICAL LABORATORY SCIENCES HONOURS**

NSLS209: IMMUNOLOGY PRACTICAL

END OF SEMESTER FINAL EXAMINATIONS

NOVEMBER 2025

LECTURER: MR Z. CHIWODZA

DURATION: 3 HOURS

INSTRUCTIONS

Answer **all** questions on the separate answer sheet provided.

Mark allocation for each question is indicated at the end of the question

Credit will be given for logical, systematic and neat presentations

SECTION A - Wet Practical

Question 1

Carry out the latex agglutination pregnancy test on the urine samples (Sample **A** and Sample **B**) using the given test kit and follow the procedure below.

Pregnancy Test Procedure

- i. Take a reaction slide and label the circles **A, B, N, and P**.
 - ii. Gently mix the pregnancy latex reagent and place one drop of the latex reagent on each of the four labeled circles.
 - iii. Using a disposable pipette, place one drop of each urine sample on the corresponding labeled circle and mix the contents of each circle using the paddle end of the pipette.
 - iv. Place a drop of the positive control on the circle labeled **P** and a drop of the negative control on the circle labeled **N**. Use a new pipette for each circle.
 - v. Rotate the slide back and forth for 2 minutes and read the results.
- a) Record your results on Result forms that you design (*There will be no need to have it signed by the lab supervisor*). [25 marks]
- b) Explain the principle of the latex agglutination pregnancy test used in this question. [5 marks]

Section B - Spot test

Question 2

You have been provided with the following tests which are from a 57 year old female **Felistas** who is infected with HIV. She has a global headache. **Dr Perske** has provided you with a Cerebral Spinal Fluid (CSF) for tests to determine the causes of his signs and symptoms. The following tests were performed

1. CSF cell count (Slide **C**)
 2. India Ink stain (Slide **D**)
 3. CD4+ Cell count - 189 cells/mm³
- a) Record your results in a suitable results form. (*There will be no need to have it signed by the lab supervisor*) [30 marks]
- b) Based on the results shown, what disease is **Felistas** most likely suffering from? [2 marks]
- c) Briefly explain the immunological mechanisms that led to the findings in Slide **C**, Slide **D**, and Result Slip **E** [8 marks]
- d) Name 2 other immunological tests that can be done to confirm the diagnosis. Explain their principles. [10 marks]

Question 3

You have been provided with 2 test cassettes showing results from 2 patients (Patient **F** and **G**).

- a) Record the results in a table. **[5 marks]**
- b) Explain the immunological principles occurring in the test cassette for each lane. **[5 marks]**
- c) Explain the clinical implications for each of the patient's results. **[10 marks]**

TOTAL: 100 Marks

The END