



**“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 SECOND SEMESTER FINAL EXAMINATIONS**

**APRIL 2025**

**LECTURER: MR Z. CHIWODZA**

**DURATION: 3 HOURS**

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***INSTRUCTIONS***

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

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

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Credit will be given for logical, systematic and neat presentations

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## SECTION A - Wet Practical

### Question 1

Two female athletes from a local sports club have come to the outpatient department (OPD) for medical evaluation. Both have been experiencing unusual fatigue and have missed their periods for the past two months. Given their physically demanding training schedules, they are unsure if the missed periods are due to pregnancy or other factors. They have requested a pregnancy test to confirm their status.

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 labelled circles.
- iii. Using a disposable pipette, place one drop of each urine sample on the corresponding labelled 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 labelled **P** and a drop of the negative control on the circle labelled **N**. Use a new pipette for each circle.
- v. Rotate the slide back and forth for 2 minutes and read the results.

#### Results

- a) Record your results on Result forms that you design (*There will be no need to have it signed by the lab supervisor*). **[40 marks]**
- b) Explain the principle of the latex agglutination pregnancy test used in this question. **[5 marks]**

**SECTION TOTAL: 45 Marks**

## Section B - Spot test

### Question 2

You have been provided with the following tests from a 22 year old female, Rox Anny, who is HIV positive. She has a global headache and doctor Dr Perske has provided you with a Cerebral Spinal Fluid for tests to determine the causes of her signs and symptoms. The following tests were performed

1. CSF cell count (Slide C)
2. India Ink stain (Slide D)
3. CD4+ Cell count (Result Slip E)

### Results

- 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) Explain the principle of the test that was used to determine the CD4+ count. [5 marks]
- c) Name 4 other tests that can be used to confirm the diagnosis and explain their importance. [10 marks]

### Question 3

You have been provided with 2 cassettes showing results from 2 patients (Patient F and G) suspected to be suffering from Hepatitis B.

- 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]

**SECTION TOTAL: 65 Marks**

**TOTAL: 100 Marks**