



**AFRICA
UNIVERSITY**
A United Methodist-Related Institution

"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 PRACTICALS

END OF SEMESTER FINAL EXAMINATIONS

NOVEMBER 2023

LECTURER: MR G. MALUNGA

DURATION: 3 HOURS

INSTRUCTIONS

Answer **all** questions on 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

Question 1

You are provided with 2 serum samples **Z** and **M** from 2 patients who are suspected to be infected with Hepatitis B virus (HBV). You are required to perform the rapid Hepatitis B full profile test using the provided kit and its insert.

a) Record your results in the form of a table as shown below

HBV Marker		HBsAg	HBsAb	HBeAg	HBeAb	HBcAb	Overall result
Result	Z						
	M						

[25]

b) Explain your results and give your diagnosis of the patients **Z** and **M**. [10]

c) Give a summary of the principle of the test. [10]

d) What precautions should be taken when carrying out this test [5]

TOTAL: 50 Marks

Question 2

1. You are provided with 2 urine samples labeled **W1** and **W2** from 2 women who are suspected to be pregnant because one of them has missed her menstrual period for one month while the other one has missed hers for three months. Carry out the pregnant test on the urine samples using the given test kit following the procedure below. The minimum urine concentration of human chorionic gonadotropin detected by this test is 200 IU/L.

Pregnant test procedure

- i. Take a reaction slide and label 4 circles: **W1**, **W2**, **N** and **P**.
- ii. Gently mix the pregnancy latex reagent and place one drop of the latex reagent on each of the 4 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. Place a drop of the positive control on the circle labeled **P** and a drop of the negative control on the circle labelled **N**. Use a new pipette for each circle.
- iv. Rotate the slide back and forth for 2 minutes and read the results.
 - a) Record your results in the form of a table. [20]
 - b) Explain the principle of the pregnancy test used in this question. [15]
 - c) Which sample is from the woman who missed her period for one month? Support your answer. [5]
 - d) Sometimes a woman who is pregnant can produce a urine sample which can give a negative pregnancy test. What are the possible causes of this scenario? [5]
 - e) Which other tests can be done to confirm your results? [5]

Total: 50 Marks