

(University of Choice)

**MASINDE MULIRO UNIVERSITY OF  
SCIENCE AND TECHNOLOGY  
(MMUST)  
MAIN CAMPUS**

**UNIVERSITY EXAMINATIONS  
2021/2022 ACADEMIC YEAR**

**END OF TERM PRACTICAL EXAMS**

**FOR THE DEGREE  
OF  
BACHELOR OF MEDICAL LABORATORY SCIENCES  
THIRD YEAR**

**COURSE: PRACTICUM 1  
CODE: MLC 300**

**DATE: 13/04/2022      TIME: 3hrs**

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**INSTRUCTIONS TO CANDIDATES**

Answer all questions

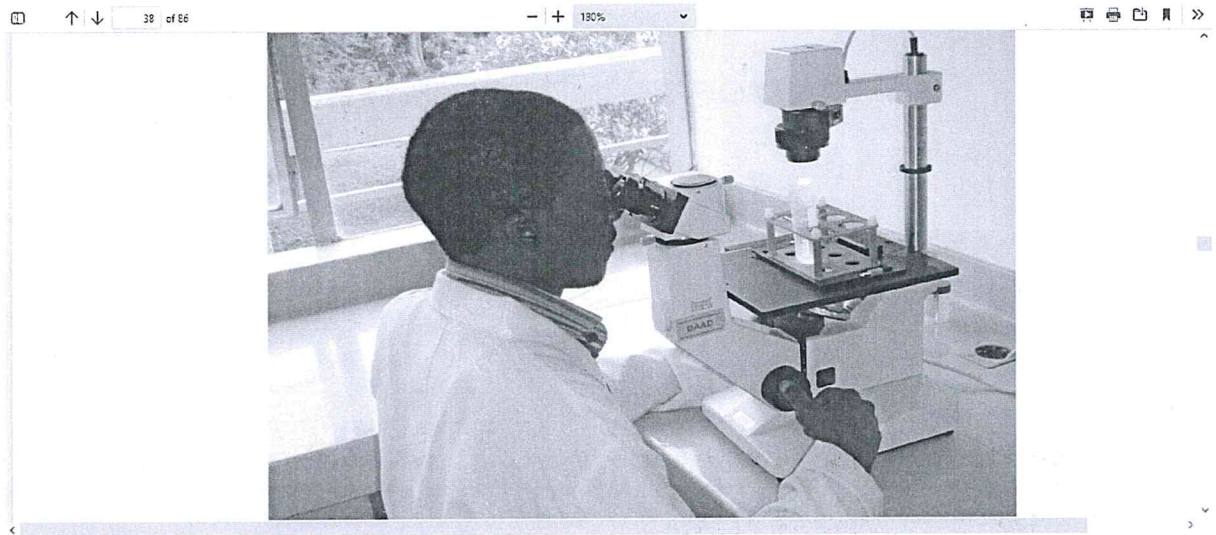
Leave your work on the bench for the examiners to view

MMUST observes ZERO tolerance to examination  
cheating

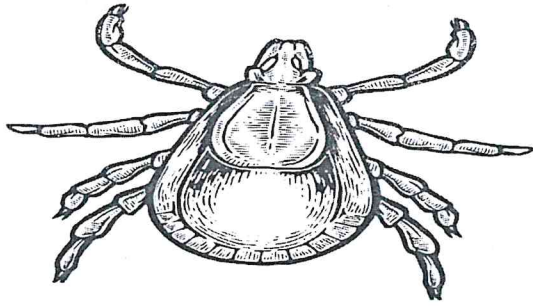
This Paper Consists of 6 Printed Pages. Please Turn Over.

## MEDICAL PARASITOLOGY AND MEDICAL ENTOMOLOGY

1. a) Identify spot “P4” and give its scientific name (2 marks)  
b) Which is the other species of the Genera and explain both their medical significance (4)  
c) How can man avoid their infestation (4)

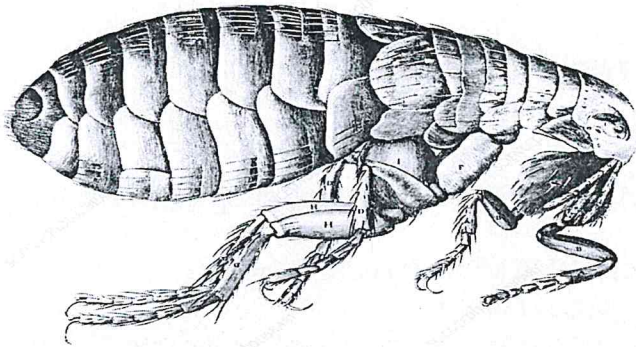


- 2 a) Name the equipment in use in the picture above (2 marks)  
b) What is the principle for use? (4 marks)  
c) What do you make of what the scientist is examining? (2 marks)



Adapted from: [unreadable]

"E 1"



"E2"

3. a) Identify spot "E1" and "E2" and classify them to the species level (4 marks)
- b) Explain their medical significance (4 marks)
- c) What makes them successful vectors? (4marks)
4. a) With the item/s provided and displayed as "P4" name the technique(2 marks)
- b) Explain circumstances under which the method is significant in medical parasitology laboratory (8 marks)

## VIROLOGY

1. You are provided with specimen marked "P".

Using the apparatus provided, carry out the rapid plasma reagin test.

- a) Write down your procedure.
- b) Tabulate your findings.
- c) Discuss your findings.

NB: Leave the accomplished task on the bench for marking purposes (20 marks).

2. (a) Identify spot "A" (1 mark).
- (b) State the use of spot "A" (1 mark)
- (c) Explain the principle underlying spot "A" (3 marks).
- (d) Advice on the care and maintenance of spot "A" (1 mark)
- (e) Distinguish between forward and reverse techniques while using spot "A" (4 marks).

## HISTOPATHOLOGY AND CYTOPATHOLOGY

1. You are provided with a routine histology chemical marked spot H-1. Use it to answer the questions that follows;
  - a. State how you would prepare 100 MLS of spot H-1(6mks)
  - b. State its use in routine histology (2mks)
  - c. State any precautions that should be taken when handling the spot (2mks)
2. You are provided with slide marked H-2. Use it to answer the questions that follows;
  - a. Identify the tissue under oil immersion objective (3mks)
  - b. List any other three examples of related tissue (3mks)
  - c. State the importance of the tissues in a and b above (4mks)
3. Use spots H-3, H-4 and H-5 to answer the questions that follows;
  - a. Describe briefly the steps that were used to achieve spot H-3 (8mks)
  - b. Describe the difference between spot H-4 and H-5 in terms of their use (4mks)
4. The spot labeled H-6 is routine histological equipment. Use it to answer the questions that follows;
  - a. Study the equipment and describe how its adapted to its use (5mks)
  - b. State any two routine and one preventive maintenance practices involved when using this equipment (3mks)

## MEDICAL MICROBIOLOGY

Q1:

M1 is an overnight culture growth. Make a slide smear from the inoculum and by using the reagents provided, carry out the subsequent test and give a report (10 marks)



b) Perform the necessary biochemical test(s) using the reagents provided and make a report outlining (10 marks)

- i The principle of the test(s)
- ii Example of pathogens that exhibit positive reaction to the test(s)

Q2:

- a) Name spot M2 and its significance (5 marks)
- b) Outline the procedure of preparing spot M2 and how to manipulate results (15 marks)

### HAEMATOLOGY

1. You are provided with sample labeled **HM 1**. With the apparatus and reagents provided: -
  - a) Perform Reticulocyte count (5 marks)
  - b) Write down the procedure (5 marks)
  - c) Name the five supra vital stains commonly used to do Reticulocyte count (5marks)
2. Use **SPOT HM 2** to answer the questions below: -
  - a) What test is performed using the spot (3 marks)
  - b) Write down the test procedure you named in (a) above (7 marks)
3. Use **SPOT HM 3** to answer the questions below: -
  - a) What is the unit of reporting the test done using the spot? (2 marks)
  - b) What is the normal range for men and women? (3 marks)

### BLOOD TRANSFUSION SCIENCE

1. You are provided with blood samples labeled **BT 1**, reagents and apparatus. Perform: -
  - a) Compatibility testing (10 marks)
  - b) Write down the procedure (10 marks)
2. Use **SPOT BT 2** to answer the questions below: -
  - a) Name the spot (2 marks)
  - b) Mention three areas in blood transfusion bench where the spot is used (3 marks)
3. Use **SPOT BT 3** to answer the questions below: -
  - a) Name the spot (2 marks)
  - b) State at what temperature the spot is stored and how long it takes to expire (3 marks)

### CLINICAL CHEMISTRY

1. 1. You are provided with a test sample labelled 'C1'. Using the reagents and apparatus provided perform barfoed test indicating your finding. [10 mark]

2. You are provided with a urine specimen labelled **C2** obtained from a 35 year old man for clinical examination at Busia county referral Hospital. With the reagents and apparatus provided:
- a) Perform urinalysis examination on the spot **C2** provided, document the findings and state the significance presence of ketones. **(10marks)**
  - b) List five preservatives of spot **C2**. **(5marks)**
  - c) Suggest further tests that can be carried out to confirm your findings **(3marks)**
  - d) Mention any pathological condition/s associated with your findings **(2marks)**
3. You are provided with the spot labelled **C3**. Use it to answer the following questions.
- a) Name the spot labelled **C3**. **(2marks)**
  - b) State the principle of the spot labelled **C3**. **(5marks)**
  - c) State the applications of the spot labelled **C3****(3Marks)**
  - d) Describe the routine maintenance procedures for spot **(3marks)**