



(University of Choice)

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

**UNIVERSITY EXAMINATIONS
2021/2022 ACADEMIC YEAR**

FINAL PRACTICAL EXAMS

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

**COURSE: PRACTICUM II
CODE: MLC 400**

DATE: 03/05/2022

TIME: 3hrs

INSTRUCTIONS TO CANDIDATES

Answer all questions

Leave your work on the bench for the examiners to view

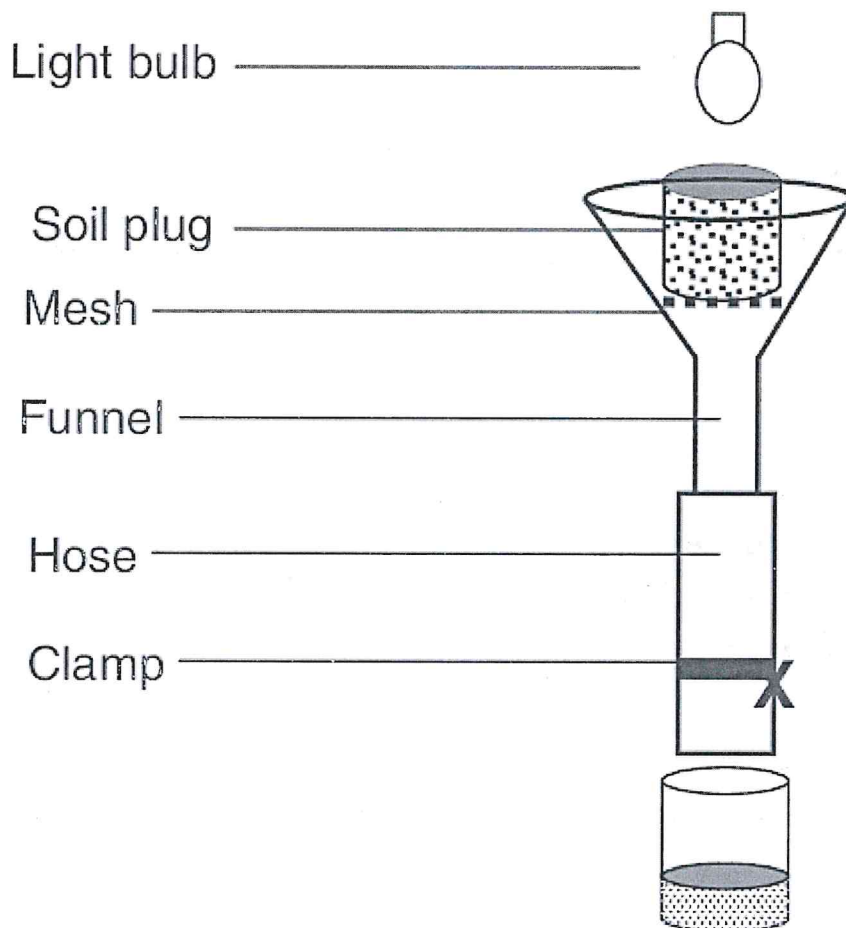
MMUST observes ZERO tolerance to examination
cheating

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

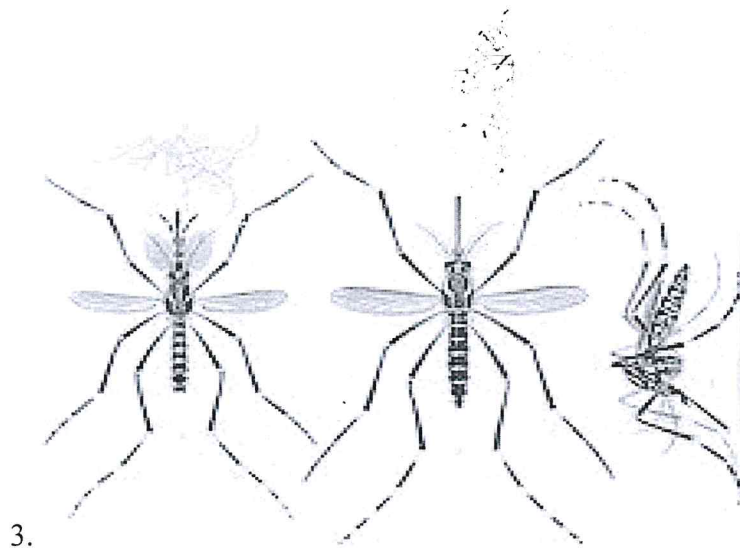
PARASITOLOGY / ENTOMOLOGY

1. a) Identify spot "P1" and record its scientific and common name (2 marks)
b) State the scientific name of the member of the other species and describe their medical/veterinary significance (2 marks)
c) What is the infective stage of each of the organism named in 1 & 2 above (4 marks)
d) How can man avoid their infestation (2 marks)

2.a) What are the apparatus below collectively called? (2 marks)



- b) What is the diagnostic importance (2 marks)
- c) Tabulate the procedure/s of use (6 marks)



3.

- a) Identify the above organism and classify it to the species level **(2 marks)**
 - b) Name the stages of the relevant parasite found within it in the course of the life cycle **(2 marks)**
 - c) What is the medical significance of the parasite in question **(6 marks)**
4. Process sample "P2" using the provided items and stain, outline your procedure and results **(10 marks)**

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)**

CLINICAL CHEMISTRY

1. You are provided with a test sample labelled 'C2'. Using the reagents and apparatus provided perform burret test indicating your finding. [10 mark]
2. You are provided with urine specimen labeled "C1" obtained from a 55 year old man for clinical examination at Kakamega county teaching and referral Hospital. With reagents and apparatus provided, determine the substance/s contained in sample C1 as far as possible. [6 marks]
 - i) Tabulate and comment your results [5marks]
 - ii) Suggest what further test/s can be carried out to confirm your findings [5 marks]
 - ii) Mention any pathological condition/s associated with your findings [4 marks]
3. You are provided with the spot labelled 'C3'. Use it to answer the following questions.
 - i) Identify the instrument [2.5marks]
 - ii) State the principle of the instrument (5 marks)
 - iii) Mention its use/s in clinical laboratory [2.5 marks]

HISTOLOGY

1. The spot marked **H-1** and **H-2** are equipment routinely used in histology. Use them to answer the questions that follows;
 - a. Name the spots **H-1** and **H-2** (4mks)
 - b. Describe how both spots works in order to achieve their purpose (10mks)
 - c. Name the part of the spot **H-1** labeled (a) (2mks)
 - d. Describe any key additional material required to achieve better performance of part labeled (a) (3mks)
 - e. Describe the importance of part labeled (b) (3mks)
2. Use spots **H-3**, **H-4**, **H-5**, **H-6** to answer the questions that follows;
 - a. Give the name of spot **H-3** and describe how it was obtained (6mks)
 - b. State the use of the spot **H-4** and list any other two alternative to it (3mks)
 - c. Describe the use of **H-5** in combination with **H-6** (3mks)
3. You are provided with a slide marked **H-6**, which is an example of a connective tissue. Use it to answer the questions that follows;
 - a. Give the exact name of the particular connective tissue observed in this slide (1mk)
 - b. State three functions of this tissue (3mks)
 - c. State any other two examples of this tissue (2mks)

HAEMATOLOGY

1. You are provided with sample **HM 1** from a female patient suspected to be suffering from anaemia. Using the apparatus and reagents provided:
 - a) Make a PBF **(5 marks)**
 - b) Stain with the Leishman stain provided and write systematically the staining procedure **(10 marks)**
 - c) Report on your finding **(5 marks)**
2. Use spot **HM 2** to answer the following questions:
 - a) Name the spot **(2 marks)**
 - b) List the ingredients and their exact amounts used to prepare the spot **(8 marks)**
3. Use spot **HM 3** to answer the questions below
 - a) Name the spot **(2 marks)**
 - b) Explain the use of the spot **(3 marks)**
4. Use spot **HM 4** to answer the questions below
 - a) What anticoagulant is in the spot **(2.5 marks)**
 - b) Mention the test performed with samples collected in the spot **(2.5 marks)**

BLOOD TRANSFUSION SCIENCE

1. Nafula is an expectant mothers and during her prenatal screening the doctor found out she is rhesus negative.
 - a) What further laboratory test should the doctor request to be done on her? **(3 marks)**
 - b) Using the apparatus and reagents provided perform the test you mentioned in (a) above **(7 marks)**
 - c) Write down clearly the test procedure **(10 marks)**
2. Use **SPOT BT 1** to answer the questions below
 - a) Name the spot **(3 marks)**
 - b) Explain how the spot is used **(5 marks)**
3. Use **SPOT BT 2** to answer the questions below
 - a) Name the spot **(3 marks)**
 - b) Explain how the spot is used in blood transfusion **(3 marks)**
4. Use **SPOT BT 3** to answer the questions below
 - a) Name the spot **(3 marks)**
 - b) Whats the indication of the spot **(3 marks)**

MEDICAL VIROLOGY

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

Using the apparatus provided, carry out the requisite 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)**.

7. Spot "H" is a pictorial representation of the Hepatitis Virus

(a) Name the parts labeled A-G **(3.5 marks)**

(b) State the family to which spot "H" belongs to **(1.5 Marks)**

(c) Describe the diagnosis of the spot "H" **(5 marks)**