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

NSLS207: PARASITOLOGY, MYCOLOGY AND VIROLOGY

END OF SEMESTER EXAMINATIONS

LECTURER: DR S L MUTAMBU

APRIL 2024 EXAMINATIONS

DURATION: 3 HOURS

INSTRUCTIONS

1. Write your candidate number on your answer sheets.
2. Answer all questions.
3. Marks for each question are indicated in brackets at the end of the question.
4. Credit will be given for logical, systematic and neat presentations

Answer ALL questions

Question 1 (40 marks)

Mr Kona goes to the small dam every day to fish so that he can provide his family with at least one decent meal daily. He uses nets to fish and almost half of his body is submerged in water during this activity. This morning he presented at the local health facility with abdominal pain, a slightly enlarged liver and problems in passing urine.

Mr Kona has been requested to provide sample **A** which he has brought to the laboratory for you to examine.

a) Examine sample **A** and give a full account of your findings. *(5 marks)*
b) Perform procedure **B** shown below.

PROCEDURE B

1. Mix well sample **A**.
2. Place sample **A** in a conical tube.
3. Spin the conical tube with sample **A** for 3 minutes.
4. Discard the supernatant using a Pasteur pipette.
5. Remix the sediment well by tapping the bottom of the tube.
6. Put a small drop of the well mixed sediment on a glass slide followed by a drop of Iodine.
7. Cover the Iodine stained sediment with a cover slip and examine under the microscope using the 10X and 40X objective lenses.

i. Draw the organism that you have identified in sample **A** and discuss your findings in detail. *(15 marks)*
ii. Briefly outline the life cycle of the organism that you have drawn. *(10 marks)*
iii. Discuss in detail the methods used to control the disease caused by the infective organism that you have found in sample **A.** *(10 marks)*

Question 2 (20 marks)

You are provided with sample **C** in a petri dish on the bench.

a) Name the organism and the disease it causes. *(2 marks)*
b) Give a detailed account of its life cycle. *(10 marks)*
c) Briefly discuss the methods used to control the disease it causes. *(8 marks)*

Question 3 (40 marks)

On the workbenches, you are provided with labelled slides, petri dish and pictures with a variety of parasites.

a. Identify the parasite and draw the stage of its life cycle shown on slides **D, E, F** and **G** under the microscope. *(8 marks)*
b. What disease does each parasite on slides **D, E, F** and **G** cause? (4 marks)
c. How is the disease caused by **E** spread? (4 marks)
d. What can one do to control the spread of disease caused by **E**? (4 marks)
e. Draw and label any three parts of the parasite that you have identified on slide **D.** (4 marks)
f. Identify the parasite and stage of its life cycle shown in pictures **H** and **I.** (4 marks)
g. Label any two parts of the parasite in picture **I**. (2 marks)
h. What disease does each parasite in pictures **H** and **I** cause? (2 marks)
i. Identify the parasite and stage of its life cycle shown in petri dish **J** and on slide **K.** (4 marks)
j. How does one get infected with parasites **J** in the petri dish and **K** on the slide? (4 marks)

END