CANDIDATE NUMBER ……

"*Investing in Africa's Future*"

COLLEGE OF HEALTH, AGRICULTURE & NATURAL SCIENCES

DEPARTMENT OF BIOMEDICAL AND LABORATORY SCIENCES

BACHELOR OF MEDICAL LABORATORY SCIENCES HONOURS

NSLS 207: PARASITOLOGY, MYCOLOGY & VIROLOGY PRACTICAL

END OF SECOND SEMESTER FINAL EXAMINATION

NOVEMBER 2023

LECTURER: Dr S. MUTAMBU

DURATION: 3 HOURS

INSTRUCTIONS

1. Answer **all** questions on separate answer sheets provided.
2. Mark allocation for each question is indicated at the end of the question.
3. Credit will be given for logical, systematic and neat presentations.

Answer ALL questions

Question 1 (40 marks)

You have been provided with a conical tube containing **sample A** taken from **Jabu**, an eight year old boy who presented at the local clinic with abdominal pain, enlarged liver and problems passing urine. **Jabu** is a pupil at **Harani School** situated 200 metres from **Kanga River**. He has enjoyed swimming daily with his classmates in **Kanga River** since he started classes at **Harani School**, 18 months ago.

a) Examine **sample A** in the conical tube and give a detailed account of your findings. *(5 marks)*

b) Perform **Procedure B** shown below**.** *(10 marks)*

PROCEDURE B

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

c) Illustrate and discuss in detail your findings. *(10 ma rks)*

d) Outline the principle of **Procedure B.** *(5 marks)*

e) Briefly discuss 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)

Parents have noticed that some of the children attending an **Early Childhood Development Centre Y** have developed an infection on their scalp which is causing swollen red patches, dry scaly rashes **(picture C**), itchiness and hair loss.

Picture C showing infection of the scalp

a) Discuss how you would collect a sample from the affected area of the scalp for use in the identification of the organism that is causing the infection shown in **picture C** *(5 marks)*

b) Outline the microscopic methods that you would use to examine the collected specimens. *(10 marks)*

c) Name two (2) of the most common types of organisms that cause scalp infections in children between the ages of 2-10 years. *(2 marks)*

d) Briefly discuss methods used to control the infection shown in **picture C.** *(3 marks)*

Question 3 (40 marks)

On the work benches, you are provided with slides and in pictures with different types of organisms.

a) Identify the organism and draw the stage of its life cycle on slides **D, E, F** under the microscope and in pictures **G** and **H**. *(15 marks)*

b) What disease does each organism on slides **D, E, F** and in pictures **G** and **H** cause? *(5 marks)*

c) How is each organism that you have identified on slides **D, E, F** and in pictures **G** and **H** transmitted? *(5 marks)*

d) Briefly describe how each organism on slides **D, E, F** and in pictures **G,** and **H** is diagnosed in the laboratory**.** *(15 marks)*