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 2025

DURATION: 3 HOURS

INSTRUCTIONS

1. Write your candidate number on your answer sheets.
2. Answer any 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 any ALL questions

QUESTION 1 [40 marks]

Keiki aged 25 years was in the rural areas for the past three weeks visiting her mother-in-law who had not been feeling well. Yesterday **Keiki** visited her workplace clinic because she had a flu-like illness, chills, headache, muscle pain, tiredness and had vomited twice. **Keiki** was requested to provide a blood sample in a tube labelled **A** which was sent to the laboratory for testing. The scientist in the laboratory prepared blood slides **B1 and B2** on the bench for you to examine**.**

a) Using blood slides **B1 and B2**, perform procedure **C** shown below and submit your slides for assessment. [15]

PROCEDURE C

1. *Add nine (9) parts of water to one (1) part of Giemsa stock solution to prepare a 10% working solution*
2. *Prepare thin and thick blood smears using the blood sample in tube A.*
3. *Allow the slides to dry completely in air by placing the slides on a flat surface.*
4. *Fix the thin smear with methanol for approximately 2 seconds and allow to dry in air.*
5. *Place the thin and thick slide on the staining rack.*
6. *Flood both the thin and thick smears on the slides on the staining rack with 1 in 10 diluted Giemsa stain and allow to stand for 10 - 15 minutes.*
7. *Gently wash the Giemsa stain with a stream of buffered water or tap water*
8. *Tilt the slides to remove excess water.*
9. *Wipe the underneath of the slides and allow them to air dry.*
10. *Examine the smears on the stained blood slides on the microscope under oil immersion.*

b) Explain the principle of procedure **C.** [5]
c) Name and draw the organism observed on slide **B1**. [2]
d) What disease does the organism on slide **B2** cause? [1]
e) What treatment should Keiki be given and why? [2]
f) Discuss the life cycle of the organism that you have named and drawn in c) above. [15]

QUESTION 2 [20 marks]

You are provided with Pictures **X** and **Y** on the bench.

a) Name and label four different parts of the organism in Picture **X**. [5]
b) Discuss the role of each part of the organism in Picture **X** that you have labeled. [4]
c) What drug is used to treat the disease caused by the organism in Picture **X**? [1]
d) Name and label four different parts of the organism in Picture **Y**. [5].
e) Discuss the role of each part of the organism in Picture **Y** that you have labeled. [4]
f) What disease does the organism in Picture **Y** cause? [1]

QUESTION 3 [40 marks]

On the workbenches, you are provided with slides, pictures and petri dishes with different parasites. They are numbered from **D** to **K.**

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

THE END