AFRICA UNIVERSITY
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COLLEGE OF HEALTH, AGRICULTURE AND NATURAL SCIENCES

DEPARTMENT OF BIOMEDICAL AND LABORATORY SCIENCES

BACHELOR OF MEDICAL LABORATORY SCIENCES HONOURS

NSLS 211: HISTOLOGY PRACTICAL

END OF SECOND SEMESTER FINAL EXAMINATIONS

APRIL 2025

LECTURER: PROF MAIBOUGE SALISSOU

DURATION: 3 HRS

INSTRUCTIONS

SECTION A: Spot exam: Answer all questions on a separate sheet provided

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SECTION B: Answer all questions.

SECTION C : Answer all questions

Section A: Spot exam

Answer all questions.

1. A1; A2; A3; A4; A5 are special stains of body tissues which included liver, kidney , bone marrow as well as the sputum and exfoliates
   a) Identify the type of stains from A1; A2; A3; A4; A5(each stain identified carried 2marks) **(total 10 marks)**
   b) Report the results from A1; A2; A3; A4; A5(Report for each stain carried 5 marks) **(total 25 marks)**
   c) Justify your answer from A1; A2; A3; A4; A5 (justification for each stain carried 3 marks) **(total 15 marks)** .

Section B

Answer all questions

1. A 45 years old man has been coughing for the last two weeks, with fever and weight loss and visited the health care centre. After the collection of the sputum sample, a histological laboratory procedure for the identification of *Mycobacterium tuberculosis* was performed.

You have been provided with the prepared slide *TB1* for the sputum from the old man for examination.

a) Identify the type of stain used for this slide:(5 mark)
b) Carefully examine the slide and report your findings (5).
c) Explain the principle of the test used (5)
d) If your tissue were a lung biopsy, explain all the processes that would be done to obtain a paraffin embedded block of the tissue (10)

Section C: Answer all questions

1. Carry out the following staining protocol on the section **X** provided using the method below (25).

<u>Method</u>

A. Dewax sections **X** and rehydrate the section **X** following the procudure below:

a)	Xylene	10 dips
b)	Xylene	10 dips
c)	Xylene	10 dips
d)	Absolute alcohol	10 dips
e)	Absolute alcohol	10 dips
f)	95% alcohol	10 dips

g)	85% alcohol	10 dips
h)	75% alcohol	10 dips
i)	Rinse in tap water	2 minutes

j) Mix equal parts of 2% Hydrochloric acid and 2% Potassium ferrocyanide.
k) Use this mixture to flood on to the rehydrated section **X**.
l) Leave for 30 min at room temperature.
m) Wash in several changes of distilled water.
n) Counter stain with aqueous neutral red solution for 1 min.
o) Wash in distilled water

B. Dehydrate and clear the section as follows:

a)	75% alcohol	10 dips
b)	85% alcohol	10 dips
c)	95% alcohol	10 dips
d)	Absolute alcohol	10 dips
e)	Absolute alcohol	10 dips
f)	Xylene	10 dips
g)	Xylene	10 dips

h) Mount in poly-x mountant
i) Label your section using provided stickers.

2. What is the name of the stain used in the method above? (5)
3. What is the principle of this stain? (15)
4. Provide additional precautions which were not mentioned above to ensure successful identification of the substances in the tissue of Section X (5)