



*“Investing in Africa’s future”*

**COLLEGE OF HEALTH, AGRICULTURE AND NATURAL SCIENCES**

**DEPARTMENT OF BIOMEDICAL AND LABORATORY SCIENCES**

**NSLS 211: HISTOLOGY PRACTICAL**

**END OF SECOND SEMESTER FINAL EXAMINATION**

**APRIL/MAY 2023**

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**DURATION: 3 HRS**

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### ***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. A 1, A2, A3, A4, A5 are special stains in histology. Identify the stains; report the results and justify (50).

## SECTION B: Clinical case

**Answer all questions**

1. A 45 years old man has been coughing for the last two weeks, with fever and weight lost and visited the health care centre. After the collection of the sputum sample, a Histological laboratory procedure for the identification for the identification of *Mycobacterium tuberculosis* was performed. You have been provided with the prepared slide **TBI** for examination.
  - a) Identify the type of stain:
  - b) Carefully examine the slide and report your findings (5).
  - c) Explain the principle of the test (10)
  - d) If your tissue was a lung biopsy explain all process to obtain paraffin embedded block of the tissue (10)

## SECTION C

**Answer all questions**

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

### **Method**

- i. Dewax sections and bring sections to water as follow:
  - 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 and flood or add few drop of this mixture on to the sections then leave for 30 min at room temperature.
  - k. Wash in several changes of distilled water.

- l. Counter stain with aqueous neutral red solution for 1 min.
  - m. Wash in distilled water
  - n. Dehydrate and clear the section as follows:
    - ii. 75% 10 dips
    - iii. 85 % 10 dips
    - iv. 95% alcohol 10 dips
    - v. Absolute alcohol 10 dips
    - vi. Absolute alcohol 10 dips
    - vii. Xylene 10 dips
    - viii. Xylene 10 dips
    - ix. Mount in poly-x mountant
    - x. Label your section using provided stickers.
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- a) What is the name of this stain? (5)
  - b) What is the principle of this stain? (15)
  - c) What further precautions to ensure (not mentioned above) can help identify substances in the tissue (5)

END