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UNIVERSITY
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COLLEGE OF HEALTH, AGRICULTURE AND NATURAL SCIENCES

BACHELOR OF MEDICAL LABORATORY SCIENCES

NSLS 211: HISTOLOGY PRACTICAL

END OF SECOND SEMESTER FINAL EXAMINATIONS (MAIN)

APRIL 2024

LECTURER: DR MAIBOUGE SALISSOU

DURATION: 3 HRS

INSTRUCTIONS

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

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 your answers (50).
2. H 1 is a machine commonly used in histology.
 - a) Identify the machine and its working procedure(2)
 - b) State major characteristics that account for difference between H1 and cryostat (3)

Section B: Clinical case: Answer all questions

A 55-year-old woman presents with increasing weight loss and fatigue and subsequently dies of metastatic cancer which metastasizes to the vertebral column. The vertebral column at autopsy is shown in the image below, which contained pigments.



- a) What is the diagnosis among options below?
 - i. Chondrosarcoma
 - ii. Melanoma
 - iii. Multiple myeloma
 - iv. Osteosarcoma
 - v. Rhabdomyosarcoma (3).
- b) What type of stain can be further be done to support this diagnosis (2).
- c) Explain the principle of the staining method you choose for this patients (5)
- d) explain all process to obtain paraffin embedded block of the tissue (10)

Section C: Answer all questions

1. 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.
2. What is the name of this stain? (5)
 3. What is the principle of this stain? (15)
 4. What further precautions to ensure (not mentioned above) can help identify substances in the tissue (5)

END