NAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY

FACULTY OF HEALTH, APPLIED SCIENCES AND NATURAL RESOURCES

SCHOOL OF HEALTH SCIENCES

DEPARTMENT OF CLINICAL HEALTH SCIENCES

QUALIFICATION: BACHELOR OF MEDICAL LABORATORY SCIENCES	
QUALIFICATION CODE: 08BOHS	**LEVEL:** 6
COURSE CODE: ANP611S	**COURSE NAME:** ANATOMICAL PATHOLOGY 2A
SESSION: JULY 2023	**PAPER:** THEORY
DURATION: 3 HOURS	**MARKS:** 100

SECOND OPPORTUNITY EXAMINATION QUESTION PAPER	
EXAMINER(S)	**MS BELINDA ROSELIN TSAUSES**
MODERATOR:	**MS NDESHIPEWA HAMATUI-VALOMBOLA**

INSTRUCTIONS
1. Answer ALL the questions. 2. Write clearly and neatly. 3. Number the answers clearly.

PERMISSIBLE MATERIALS

1. Non programmable calculator is allowed.

THIS QUESTION PAPER CONSISTS OF 5 PAGES (Including this front page)

SECTION A (10 MARKS)

QUESTION 1 **(10)**

Evaluate the statements in each numbered section and select the most appropriate answer. Write either "**True**" or "**False**" next to the corresponding number on your answer sheet.

1.1 Grossing is the process by which tissue specimens are inspected microscopically, while being processed for further diagnosis.

1.2 Control slides (positive and negative) are essential for certain histological stains and histochemical reactions.

1.3 The fact that most processes are manual rather than automated, the anatomical pathology laboratory/ department need to be adequately staffed to meet the workload.

1.4 Pseudostratified Columnar Epithelium is found in the lining of the vaginal canal.

1.5 Additional special techniques such as immunocytochemistry or special stains may be required in the histology department before a definitive diagnosis can be made and reported.

1.6 Histopathology reports are typed by a histo-typist to reduce risk of transcription errors or misinterpretation.

1.7 The gall bladder is a simple muscular sac, lined by a simple columnar epithelium and has a layer of mucularis mucosae or sub mucosa.

1.8 A tissue is a group of cells, in close proximity, organized to perform one or more specific functions.

1.9 Small biopsy samples should always be dissection before processing.

1.10 Large resection specimens will need to be sliced/ opened at the time of receipt to ensure maximum fixative penetration.

SECTION B (31 MARKS)

QUESTION 2 **[28]**

2.1 Apply your knowledge about fixation to logically explain what would happen to the tissue if it is not fixed in the context of its histologic action on the tissue. (5)

2.2 Compound fixatives are termed as "the pathologists' choice". Defend this statement. (5)

2.3 Outline five (5) properties of a good fixative in a histologic context. (5)

2.4 Draw a flow diagram showing the five (5) steps of tissue processing in a sequential manner and clearly indicate the chemical/medium that is used during each step. **(One (1) mark each for the following: each step, chemical/ medium under each step and for the correct sequence.)** (11)

2.5 The new Chief Medical Technologist (CMT) of the Anatomical Pathology Department completely wants to do away with manual tissue processing. As the Technologist-in-Charge (TIC) of the histology division, you are totally Against this decision. Critique automated tissue processing to persuade the CMT to accommodate the use of manual tissue processing in histology. Give your answers in point form. (5)

SECTION C (22 MARKS)

QUESTION 3 **[22]**

3.1 List the four (4) steps in sectioning using paraffin embedded tissue blocks in a logical sequence. **(One (1) mark for each step and no marks if the sequence is incorrect).** (4)

3.2 Justify the use of frozen tissue sections in histology. Give your answers in point form. (8)

3.3 Analyze the cause and suggest a practical solution for the following faults observed during sectioning. Draw a table on your answer sheet.

3.3.1 Holes in the section (2)

3.3.2 Washboarding or undulation in the section (2)

3.3.3 Block face unevenly sectioned (2)

3.3.4 Crooked ribbons (2)

3.3.5 Failure of ribbon to form (2)

SECTION D (26 MARKS)

QUESTION 4 **[26]**

4.1 Summarize three (3) differences between nuclear stains and cytoplasmic stains and give five (3) examples of each type of stain. (12)

4.2 Define progressive and regressive haematoxylin and eosin (H&E) staining and validate the significance using both staining methods in histology. **(One (1) mark each for: defining each method and validating its significance).** (4)

4.3 Explain each of the following immunohistochemistry methods:

4.3.1 Direct (2)

4.3.2 Indirect (2)

4.3.3 Peroxidase-antiperoxidase (3)

4.3.4 Polymeric detection (3)

QUESTION 5 **[11]**

5.1 Describe two (2) processes involved in the production of hematein from haematoxylin and give two (2) examples of haematoxylin solutions generated from each process. **(One (1) mark each for naming each process, two (2) marks each for description of each process and giving two examples).** (10)

5.2 What is the classification of haematoxylin solutions is based on? (1)

END OF EXAMINATION PAPER
GOOD LUCK!!!