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University Examinations 2024/2025

THIRD YEAR FIRST SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF MEDICAL LABORATORY SCIENCES

SECOND YEAR FIRST SEMESTER BACHELOR OF MEDICAL LABORATORY SCIENCE

HML 3317/HMU 3217: HISTOLOGY AND CYTOPATHOLOGY

DATE: JANUARY 2025

TIME: 3 HOURS

INSTRUCTIONS:

Answer *All* questions

Ensure that all your answers are properly numbered

Part I multiple Choice Questions (MCQ): Write the correct answer on the space provided in the answer booklet. Each MCQ is one mark

Part II: Short Answer Questions – Answer questions following each other on the answer booklet

Part III: Long Answer Questions – Answer each question on the answer booklet

SECTION A: MULTIPLE CHOICE QUESTIONS (20 marks)

- 1) When a chemical splashes in the eye rinse for
 - a) 10 seconds
 - b) 5 minutes
 - c) 30 seconds
 - d) 15 minutes
- 2) Is NOT a responsibility of a technologist.
 - a) Specimen preservation.

- b) Specimen labeling
- c) logging and identification.
- d) Screening to make in order to make a diagnosis

3) All of these factors described are characteristics for fixation except;

- a) Arrests autolysis
- b) Activate bacteria decomposition
- c) Minimizes loss of soluble cytoplasmic components
- d) Stabilizes tissue for further processing and treatment

4) Which statement about formal aldehyde is false?

- a) Most commonly used aldehyde fixative
- b) It is water soluble

5) When preparing a tissue for Histopathology which methods precedes clearing the specimen with organic solvent

- a) Staining
- b) Fixing
- c) Embedding
- d) Dehydration

6) All are examples of a simple fixative EXCEPT

- a) Formaldehyde
- b) Glutaraldehyde
- c) Mercuric Chloride
- d) Xylene

7) Paraffin embedded sections are cut by

- a) Electron beam
- b) Short knife
- c) Laser
- d) Microtome

8) Points to be remembered during use of paraffin wax

- It should be free from dust, grit and other foreign matter.
- It should not contain water, which causes it to crystallize and turn it white.
- The wax has to be filtered before use by use of ordinary filter paper.
- Higher melting point waxes are hard to ribbon.

9) All are used as lubricants for honing EXCEPT

- Wax
- Soap water
- Liquid paraffin
- Castor oil

10) Which one is not a type of a microtome

- Hand microtomes
- Rocking microtome
- Rotating microtome
- Freezing microtome

11) What stain is best for lipid detection?

- Sudan 111 IV
- Berlin blue
- Colloid gold
- Haematoxylin

12) What splits the ribbons floating on water into individuals or group of sections?

- Sharp blade
- Microtome knife
- Forceps
- Tooth pick

13) Is not a reason for sections showing thin and thick horizontal lines.

- A loose knife

- b) A short knife
- c) A blunt knife
- d) Extremely hard tissue

14) When staining the sections, first must be deparaffinized in xylene and rehydrate through a series of decreasing concentrations of ethanol and finally rinsed out in distilled water.

- a) True
- b) False

15) What is tissue impregnation

- a) It is the deposition of salts of heavy metals around tissue constituents
- b) Staining of tissues with haematoxylin
- c) Removing of excess water from a tissue
- d) Waxing of tissues with paraffin wax to facilitate easy cutting

16) What's a general tissue staining STAIN?

- a) Toluidine blue
- b) Sudan iv
- c) Eosin
- d) Haematoxylin and eosin

17) What stain is best for staining hemosiderin?

- a) Sudan 111 IV
- b) Berlin blue
- c) Colloid gold
- d) Haematoxylin

18) When staining the sections, first must be deparaffinized in xylene and rehydrate through a series of decreasing concentrations of ethanol and finally rinsed out in distilled water.

- a) True
- b) False

19) What's a general tissue staining STAIN?

- a) Toluidine blue
- b) Sudan iv
- c) Eosin
- d) Haematoxylin and eosin

20) What is a mordants

- a) Substance that causes certain staining reactions to take place by forming a link between the tissue and the stain
- b) Substance to link tissue elements with the stain
- c) Substance to facilitate staining of tissue structure
- d) Substance to link tissue elements with other stains

SECTION B: SHORT ANSWER ALL QUESTIONS (40 MARKS)

- 1. Describe ways of obtaining histological specimens (6 marks)
- 2. Using diagrams demonstrate various types of microtome knives (8 marks)
- 3. Critique various fixing agents used in histology laboratory (5 marks)
- 4. Describe factors affecting decalcification. (5 marks)
- 5. Explain faults of section cutting and their remedies (8 marks)
- 6. Describe uses of different staining methods. (8 marks)

SECTION C: LONG ANSWER TWO QUESTIONS (40 MARKS)

- 1. Identify various types of histology equipment and their principal (20 marks)
- 2. a) Discuss safety measures in histology laboratory (11 marks)
b) Discuss the technique of honing and stropping during microtomy (9 marks)
- 3. a) Define decalcification and describe various decalcifying agents (10 marks)
b) Explain the importance and methods of embalming (5 marks)