



“Investing in Africa’s future”
COLLEGE OF HEALTH, AGRICULTURE AND NATURAL SCIENCES
DEPARTMENT OF BIOMEDICAL AND LABORATORY SCIENCES

NSLS 210: HISTOLOGY
END OF SECOND SEMESTER FINAL EXAMINATIONS
April 2022
LECTURER: DR T.T MUTIZE
DURATION: 3 HRS

INSTRUCTIONS

Answer **ALL** questions from Section A **and ANY ONE** question from Section B

Section A carries 50 marks and each question in Section B carries 50 marks

The mark allocation for each question is indicated at the end of the question

Credit will be given for logical and systematic presentations, with diagrams.

Total marks: 100

SECTION A

Answer all questions

Mark each statement T for True and F for False

This section carries 50marks

1. The following are tissue macrophages
 - A. Kupffer cells
 - B. APUD cells
 - C. Dendritic cells
 - D. Osteoclasts
 - E. Microglia
2. The gastrointestinal mucosa
 - A. Is a stratified epithelium
 - B. Has goblet cells
 - C. Produces intrinsic factor
 - D. Is ciliated
 - E. Is the same as the genitourinary mucosa
3. The following are types of electron microscopes
 - A. Transmission
 - B. Confocal
 - C. Scanning
 - D. Fluorescent
 - E. Bright field
4. Mitosis
 - A. Is a reduction division
 - B. Includes diplotene stage
 - C. Results in chiasma formation
 - D. Results in daughter cell variation
 - E. Is the same as gap 0 phase of the cell cycle

5. The following sites possess stratified squamous non keratinizing epithelium
- A. Bladder
 - B. Oral mucosa
 - C. Trachea
 - D. Vagina
 - E. Oesophagus
6. Apoptosis
- A. Is genetically programmed cell death
 - B. Occurs in tumours
 - C. Occurs in normal growth and development
 - D. Is a synonym for necrosis
 - E. Leaves no trace of the original cell
7. The following are members of the mononuclear reticular endothelial phagocyte system (RES)
- A. Kupfer cells of the liver
 - B. Lymph node dendritic cells
 - C. Lung alveolar macrophages
 - D. Splenic macrophages
 - E. Osteoclasts
8. Types of connective tissue include
- A. Vimentin connective tissue
 - B. Loose areola connective tissue
 - C. Dense connective tissue
 - D. Myosin connective tissue
 - E. Actin connective tissue
9. Regarding bone tissue
- A. Osteoblasts synthesise the organic matrix
 - B. Osteoblasts that lie in lacunae surrounded by calcified bony matrix
 - C. Osteocytes are located in Howship's lacunae

- D. Bone marrow is located within compact bone
- E. Osteoprogenitor cells differentiate into osteoblasts that produce new bone

10. Transitional epithelium is found in the parts of the kidney. It is found in:

- A. Urinary bladder
- B. Ureter
- C. Major calyx
- D. Minor calyx
- E. Upper part of urethra

11. Glandular epithelium produce fluid that differs in composition from blood or extracellular fluid. The following is true about exocrine glands

- A. Merocrine: secretory granules leave by exocytosis with no loss of cellular material
- B. Holocrine: the whole cell is shed with the secretory granules e.g sebaceous glands
- C. Apocrine: the apical part of the cell is shed with the secretory granule
- D. Release their secretions via the duct onto the surface epithelium
- E. The secretory portion is called the acinar unit

12. The following stains use the Romanowsky principle

- A. H & E
- B. Papanicolou stain
- C. PAS
- D. Jenner staining
- E. Grocott's

13. Regarding nervous tissue

- A. Action potentials are electrical impulses
- B. Cranial nerves are part of the central nervous system
- C. The autonomic nervous system is composed of the sympathetic and parasympathetic branches
- D. The peripheral nerves are a collection of axons in the peripheral nervous system
- E. Nissl bodies are extensive smooth endoplasmic reticulum

14. Prostate gland

- A. Is located at the base of the bladder

- B. Is an endocrine gland
- C. Periurethral zone usually results in adenocarcinoma
- D. Peripheral zone results in physiological benign hyperplasia
- E. PSA is used as a screening test

15. The vagina

- A. Name is derived from the Latin meaning sheath of a sword/ scabbard
- B. Is made up of 4 layers
- C. is lined by stratified squamous keratinized epithelium
- D. glands in the wall produce secretion during sexual stimulation
- E. malignant tumour of its epithelium commonly results in a sarcoma

16. Types of muscle include

- A. Skeletal
- B. Smooth
- C. Elastic
- D. Lung
- E. Cardiac

17. The Fallopian tube

- A. Is composed of 4 layers
- B. Mucosa is thrown into folds or plicae
- C. Epithelium is simple columnar and ciliated
- D. Adventitia/ serosa contains both myelinated and unmyelinated nerves
- E. Salpingitis may be due to ascending infection (STD)

18. Fixation of tissue for slide preparation

- A. Prevents autolysis
- B. Prevents putrefaction
- C. Time between organism euthanasia and fixation is unimportant
- D. Type of fixative is unimportant
- E. Formalin 10% is an irritant that must be handled in a fume cupboard

19. The thymus

- A. Functions in T cell production

- B. Functions in B cell maturation
- C. Possesses a cortex and a medulla
- D. Hassal's corpuscles are specialised epithelium in the thymus
- E. Is a secondary lymphoid organ

20. Concerning cell organelles,

- A. The cell membrane consists of a lipid bilayer
- B. The Golgi apparatus is for protein synthesis
- C. The nucleus contains chromatin
- D. The lysosomes contain degradative enzymes
- E. The cytoskeleton is made up of microtubules

SECTION B- ESSAYS

Answer any one (1) question of your choice

This section carries 50 marks

1. Describe the histology of the primary lymphoid organs. **(50 marks)**
2. Describe the histology of the penis. **(50 marks)**
3. The cervix undergoes cyclical changes during the menstrual cycle. Describe the histology of basal, parabasal, intermediate, and superficial cells of ectocervix, and glands of endocervix as the basis of the screening Papaniculou test. **(50 marks)**

THE END