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COLLEGE OF HEALTH, AGRICULTURE AND NATURAL SCIENCES

SLS 210: HISTOLOGY

END OF SECOND SEMESTER FINAL EXAMINATIONS

APRIL/MAY 2019

LECTURER: MRS E. GOVORE

DURATION: 3 HRS

INSTRUCTIONS

Answer **ALL questions from Section A and Section B and ANY THREE** questions from section C

Section A carries 20 marks and each question in Section B carries 20 marks and section C caries 60 marks

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

SECTION A

INSTRUCTIONS

Answer all questions

Mark or circle each statement T for True and F for False

This section carries 20marks

1. The following statements are true concerning the electron microscope
    a. T. F alcohol is used as the fixative
    b. T. F heavy metals are used as stains
    c. T. F wax is the embedding media ofchoice
    d. T. F The interior is air filled
    e. T. F Focusing is done on the human eye or retina

2. Ground substance is an amorphous gel – like material. It is composed of
    a. T.F glycosaminogycans
    b. T.F proteoglycans
    c. T.F fibers
    d. T.F glycoproteins
    e. T.F cells

3. The following tissues can be examined as fixed tissues
    a. T. F Teased preparations
    b. T. F Squash preparations
    c. T. F Touch preparations
    d. T. F Frozen sections
    e. T. F Parafin embedded tissues

4. Perichondrium is present in the following
    a. T. F Hyaline cartridge
    b. T. F Bone
    c. T. F Fibrocartilage
    d. T. F Elastic cartilage
    e. T. F Articular cartilage

5. Stratified cuboidal epithelium

a. T. F Composed of five layers of cuboidal cells
b. T. F Composed of two layers of columnar cells
c. T. F Lines the duct of sweat glands
d. T. F Those in middle are polymorphous
e. T. F Cells composing free surface of epithelium are flattened

6. The following statements are true concerning the cryostat
   a. T. F Best method for preparing fixed tissue
   b. T. F Basically – is microtome housed in a dewer
   c. T. F Temperature maintained at +15 ^{0}C to +30 ^{0}C
   d. T. F Rapid freezing is necessary to avoid formation of large disruptive ice crystals
   e. T. F Liquid nitrogen is used to keep temperatures above room temperature

7. The following statements are true concerning bone cells
   a. T. F Osteoprogenitor cells: are the stem cells of the bone
   b. T.F mesenchymal cellsdifferentiate to give osteoprogenitor cells
   c. T.F Osteoblasts: synthesize and secrete the organic matrix which is later calcified by addition of hydroxyapatite crystals
   d. T.F Osteocytes: are mature osteoblasts that lie in Howship's lacunae surrounded by calcified bony matrix
   e. T.F Osteoclasts: are large and multinucleate cells derived from

8. Sarcomere is a unit between
   a. T.F Two Z lines
   b. T.F Two M lines
   c. T.F Two I lines
   d. T.F Two A lines
   e. T.F Two H lines

9. The following are Neuroglia of the central nervous system (CNS)
   a. T.F Astrocytes
   b. T.F Ependymal
   c. T.F Oligodendrocytes
   d. T.F Satellite cells
   e. T.F Schwann cells

10. The following is true concerning plasma proteins and their source
    a. T.F albumin --------Liver
    b. T.F fibrinogen -----Liver
    c. T.F Complement.....liver
    d. T.F gamma globulins ---- liver
    e. T.F Alpha and Beta globulins ------liver

11. Lymphatic vessels are found throughout body **except**:
    a. T.F Avascular tissues
    b. T.F Central nervous system
    c. T.F Splenic pulp
    d. T.F Bone marrow
    e. T.F Lymph-node

12. Hair is one of accessory structures of skin. The following statements are true concerning ggrowth cycles of Hair:
    a. T.F Hair growth cycle is determined by genetic.
    b. T.F Hair growth cycle is determined by environment
    c. T.F Anagen phase: a time of hair growth when the follicle is longest
    d. T.F Catagen phase:a resting phase
    e. T.FTelogenphase: shortening of the hair follicle

13. Alveolar secretory cells are large rounded cells which synthesize and secrete surfactant. The following satements are true concerning the surfactant
    a. T.F is glycosaminoglycan
    b. T.FIs a proteoglycan
    c. T.Freduces the surface tension of alveoli
    d. T.FWithout surfactant the alveoli collapse and cannot function
    e. T.FIs produced and secreted in the early stages of pregnancy

14. Parts of the uterus include
    a. T.FEndometrium
    b. T.FMyometrium
    c. T.FPerimetrium
    d. T.FGerminal epithelium
    e. T.FTunica albuginea

15. Sertoli Cells are evenly distributed between spermatogenic cells. Some of their functions includesecretion of hormones,these hormones include
    a. T.Finhibin
    b. T.Factivin
    c. T.FFollicle stimulating hormone
    d. T.FTestosterone
    e. T.FEstrogen

16. The following are the regions of the stomach
    a. T.FCardia
    b. T.Foesophagus
    c. T.FPylorus
    d. T.FFundus
    e. T.Fbody

17. Transitional epithelium is found in the parts of the kidney. It is found in:
    a. T.Furinary bladder
    b. T.Fureter
    c. T.Fmajor calyx
    d. T.Fminor calyx
    e. T.Fupper part of urethra

18. The following statements are true concerning mounting media
    a. T. F Coloured and opaque
    b. T. F Should cause stain to diffuse or fade
    c. T. F Should be dry to a non sticky consistency and harden relatively quickly
    d. T. F Should shrink back from the edge of coverglass
    e. T. F Able to completely permeate and fill tissue intestices

19. Meta – chromasia is a term used in histology staining, the term means
    a. T. F when a dye stains a tissue component a different colour to dye solution
    b. T. F Toluidine blue is a basic blue dye that stain mast cell granules pink
    c. T. F Toluidine blue is a basic blue dye that stain nuclei blue
    d. T. F Washing out of excess stain until colour is retained in tissue components to be studied
    e. T. F Partial or complete removal of stain from tissue sections

20. Glandular epithelium produce fluid that differs in composition from blood or extracellular fluid. The following is true about exocrine glands
    a. T. F Merocrine: secretory granules leave by exocytosis with no loss of cellular material
    b. T. F Holocrine: the whole cell is shed with the secretory granules e.g sebaceous glands
    c. T. F Apocrine: the apical part of the cell is shed with the secretory granule
    d. T. F Release their secretions via the duct onto the surface epithelium
    e. T. F The secretory portion is called that acinar unit

SECTION B

INSTRUCTIONS

Answer all questions

This section carries 20 marks

1. There are two types of cartilage growth.
   a. List the two types of cartilage growth (2)
   b. Briefly explain these types of cartilage growth (8)

2. There are three structural types of capillaries
   a. List the three types of capilaries (3)
   b. Write short notes on each type of the capillary (7)

SECTION C

INSTRUCTIONS

Answer any three (3) questions

This section carries 60 marks

1. There are two types of bone growth.
   a. List the two types of bone growth (2)
   b. Briefly explain these types of bone growth (18)

2. There are different types of knives used in the microtome.
   a. Explain the means used to classify them (4)
   b. Write briefly on 4 of these knives (10)
   c. How are the knives sharpened (6)

3. With the aid of a schematic diagram explain how formed lymph moves through the lymph vessels and how it drains back into the circulatory system (20)

4. The skin is an epithelial tissue.

   a. What type of epithelial tissue is the skin (2)
   b. With the aid of a diagram write short notes on the different layers of thick skin (18)

5. Post mortem changes are changes that occur to tissues just after death or removal from the body. Changes may be putrefactive or autolytic in nature. Putrefaction and autolysis are retarded by fixatives.
    a. List the properties of a good fixative (10)
    b. Briefly explain the classification of fixatives giving examples where appropriate (10)