



TECHNICAL UNIVERSITY OF MOMBASA

FACULTY OF APPLIED AND HEALTH SCIENCES

DEPARTMENT OF MEDICAL SCIENCES

UNIVERSITY EXAMINATION FOR:

DIPLOMA IN MEDICAL LABORATORY SCIENCE

AML 2202: HISTOLOGY I

SPECIAL/ SUPPLIMENTARY EXAMINATIONS

SERIES: SEPTEMBER 2018

TIME: 2 HOURS

DATE: Sep 2018

Instructions to Candidates

You should have the following for this examination

-Answer Booklet, examination pass and student ID

This paper consists of Section A and B. Attempt ALL questions.

Circle the correct answer in section A.

Section A

- 1 Histopathology is
 - a. The study of tissue structures
 - b. The study of diseased tissue
 - c. The study of normal body tissues
 - d. The study of cells that undergo mitosis

- 2 The major role histology plays in a hospital is
 - a. Testing new drugs
 - b. Assisting blood transfusion sciences
 - c. Diagnostic services
 - d. Discovery of new fact

- 3 Which of the following is used to aid in histological studies

- a. Chromotrope
 - b. Spectroscope
 - c. Microtome
 - d. Colorimeter
- 4 The light microscope objectives that produces high resolution is
- a. X10 objective
 - b. X60 objective
 - c. X100 objective
 - d. X40 objective
- 5 Cytoplasmic organelle that contains enzyme is called
- a. Lysosomes
 - b. Mitochondria
 - c. Plasma membrane
 - d. Centrosome
- 6 During vertebrate development, the middle layer is called
- a. Coelonic
 - b. Endoderm
 - c. Mesoderm
 - d. Mesomeric
- 7 The 1st stage of autolysis where the cell nucleous condenses is known as
- a. Karyolysis
 - b. Necrosis
 - c. Pyknosis
 - d. Karyorrhexis
- 8 The process of putrefaction is due to
- a. Fixation
 - b. Cell enzymes
 - c. Bacteria
 - d. Cancerous cells
- 9 The specialization of cells of the fundamental germ layers into tissues and organs is called
- a. Morphogenesis

- b. Histology
- c. Embrogenesis
- d. Histogenesis

10 Simple fixative include

- a. Helly's fluid
- b. Formaldehyde
- c. Zenker's fluid
- d. Bouin's fluid

11 Post fixation is a term used in histology which means.

- a. To preserve mitochondria and myelin sheath
- b. To fix enzymes
- c. To remove fatty enzymes
- d. To expose proteins from fixation

12 A group of compound fixative that fixes general tissue structures are called

- a. Micro anatomical fixatives
- b. Secondary fixatives
- c. Cytological fixatives
- d. Cytoplasmic fixatives

13 The largest organ of the body is

- a. Liver
- b. Kidney
- c. Lungs
- d. Skin

14 The following are decalcifying agents except

- a. Von-Ebner's fluid
- b. Xylene
- c. Nitric acid
- d. Formic acid

15 Picric acid is all of the following except

- a. Fixative
- b. Differentiator
- c. Decalcifying agent

- d. Natural dye
- 16 Examples of normal calcified tissues are
- a. Bone marrow
 - b. Pinna ear
 - c. Calcified scar
 - d. Calcified thyroid gland
- 17 The human body cells have an average diameter of between
- a. 5-15 microns
 - b. 10-15 microns
 - c. 1-5 microns
 - d. 10-25 microns
- 18 The part of the microscope where the object is observed is called
- a. Stage
 - b. Eye piece
 - c. Body
 - d. The condenser
- 19 A group of cells performing a similar function is called
- a. An organ
 - b. System
 - c. Body
 - d. A tissue
- 20 The ectoderm layer gives rise to
- a. Epithelia of the digestive tract
 - b. Epithelia of the respiratory tract
 - c. Epithelia of the skin
 - d. Epithelia of the surface of the cornea and conjunctiva
- 21 The following fixative inhibit haematoxyline
- a. Picric acid
 - b. Formalin
 - c. Osmium tetroxide
 - d. Chromic acid
- 22 The following is a Cytoplasmic organelle
- a. Plasma membrane
 - b. Karyosome
 - c. Mitochondria
 - d. Nuclear membrane
- 23 The following is a compound fixative
- a. Helly's fluid

- b. Formal saline
 - c. Picric acid
 - d. Formaldehyde
- 24 Histochemical fixatives are used to preserve
- a. Hormones
 - b. Cholesterol
 - c. Lipids
 - d. Enzymes
- 25 Simple columnar epithelium are found in the
- a. Intestines
 - b. Alimentary canal
 - c. Uterus
 - d. Large ducts of kidney
- 26 The most important procedure in preparation of tissue for microscopic examination is
- a. Proper preservation
 - b. Proper identification of organ
 - c. Choice of clearing agent
 - d. Staining technique
- 27 Post mordanting applies to
- a. Autopsies
 - b. Re staining
 - c. Primary fixation
 - d. Secondary fixation
- 28 The basic classification of microscopes used for examination of biological material depends on.
- a. Manufacturer
 - b. Source of light
 - c. The lenses
 - d. The model of the microscope
- 29 The main group of enzymes that cause autolysis are
- a. Lipofuchsin
 - b. Cathepsins
 - c. Aminopeptidases
 - d. Lysosomes
- 30 . The main purpose of decalcification is
- a. To test for the presences of calcium

- b. To protect the microtome knife from damage
- c. To make tissue a little bit hard
- d. To make tissue torn and ragged

31 The best time to place tissues in fixative is

- a. Immediately after removal
- b. 2 hours after removal
- c. Before removal
- d. 24 hours after removal

32 Decalcification is necessary for the following types of tissues

- a. Hair
- b. Liver tissue
- c. Cancerous lung
- d. Bones

33 The following is a cytoplasmic cytological compound fixative

- a. Flemmings fluid minus acetic acid
- b. Flemmings fluid plus acetic acid
- c. Carnoy's fluid
- d. Orth's fluid

34 The following is a histological embedding media

- a. Xylene
- b. Celloidin
- c. Cedar wood oil
- d. Butanol

35 Clearing reagents include the following

- a. carbowax
- b. Cedar wood oil
- c. Dioxane
- d. Ethyl alcohol

36 A good fixative

- a. Harden tissues
- b. Penetrate slowly
- c. Imparts colour

- d. Inhibit staining for connective tissue

37 The human cell is divided into two sections known as

- a. Nuclear inclusion
- b. Cytoplasmic inclusion
- c. Protoplasm
- d. Cell wall

38 Properties of glacial acetic acid include

- a. Solidifying at -70°C
- b. Precipitate nuclear proteins
- c. Boiling at 0°C
- d. Damage microtome

39 An adult human body cells divide and reproduce except the following

- a. Mature blood cells
- b. Cells of the nervous system
- c. Muscular cells
- d. Epithelial system

40 Picric acid is used as

- a. Embedding agent
- b. Differentiator
- c. Decalcifier
- d. Dehydrant

Section B

41 i. Outline two uses of each of the following reagents in a histology laboratory (10marks)

- a. Picric acid
- b. Gelatin
- c. Ethyl alcohol
- d. Hydrochloric acid
- e. Phenol

ii. Discuss the epithelial tissue (10 marks)

42 Describe the following terms used in histology and their effects in diagnosis.

a. Discuss postmortem changes 10 marks

b. Outline the stages of tissue processing (10marks)

43 Discuss fixatives giving the classification, advantages and disadvantages of each (20 marks)