



TECHNICAL UNIVERSITY OF MOMBASA

Faculty of Applied and Health Sciences

DEPARTMENT OF MEDICAL SCIENCES

DIPLOMA IN MEDICAL LABORATORY SCIENCES
(DMLS 12S, DMLS 13J)

AML 2142 : HISTOLOGY I

SPECIAL/SUPPLEMENTARY: EXAMINATIONS

SERIES: OCTOBER 2013

TIME: 2 HOURS

INSTRUCTIONS:

You should have the following for this examination

- *Answer booklet*

This paper consists of **TWO** sections.

Answer all questions in **Section A** and **B**. $\frac{1}{2}$ marks deducted for any wrong answer in **Section A**.

This paper consists of 9 PRINTED pages

SECTION A (40MARKS)

1. The following are not roles of histology services in a hospital except
 - a) Diagnostic
 - b) Therapeutic
 - c) Counseling
 - d) Admission
 - e) Palliative care

2. The following is a preventive maintenance of a microscope
The following is a preventive maintenance exercise of a microscope
 - a) Nipping lenser
 - b) Keep microscope open
 - c) Vandalize after use
 - d) Maintain light source
 - e) Wipe objectives using xylene

3. The following equipment may not be seen in a histology lab except
 - a) CD4 machine
 - b) Elisa Machine
 - c) Counter
 - d) Chemistry analyzer
 - e) Microtome

4. Factors affecting decalcification include
 - a) Fluid volume
 - b) Technician knowledge
 - c) Fixative used
 - d) Volume of fixative
 - e) Type of clearing agent

5. The following cannot test for complete decalcification except
 - a) x-ray
 - b) Electrophoresis
 - c) Ion exchange resin
 - d) Chelating agents
 - e) Dilute mineral acids

6. Example of a decalcifying fluid include
 - a) Acquous nitric acid
 - b) Formaline
 - c) Xylene
 - d) Benzene
 - e) Sodium chloride

7. The following tissues do not require decalcification except
 - a) Bone
 - b) Liver
 - c) Brain

- d) Intestine
 - e) Spleen
8. Decalcification is
- a) Removal of alcohol
 - b) Removal of fixative
 - c) Removal of clearing agent
 - d) Use of an embedding media
 - e) Removal of calcium ions
9. The following can be used to locate minute tissue fragments
- a) Addition of fixative
 - b) Labelling
 - c) Use of dyes e.g. eosin and picric acid
 - d) Process separately
 - e) Use low volume of reagents
10. Impregnation will
- a) Remove clearing agent
 - b) Acid media
 - c) Replace fixative
 - d) Replace dehydrant
 - e) Replace decalcifying fluid
11. Infiltration is
- a) Addition of clearing agent
 - b) Use of alcohol
 - c) Use of decalcifying fluid
 - d) Double embedding
 - e) Use of embedding media
12. Clearing agent include
- a) Acetone
 - b) Dioxane
 - c) Ethyl alcohol
 - d) Isopropyl
 - e) Xylene
13. Example of dehydrant include
- a) Xylene
 - b) Benzene
 - c) Ethyl alcohol
 - d) Chloroform
 - e) Toluene
14. Post chromatization
- a) Utilizes mercuric chloride
 - b) Use of osmium tetroxide

- c) Gelatin
 - d) 3% potassium dichromate
 - e) Transfer tissue to 70% alcohol
15. Kaiserling's fluid II
- a) Restore colour
 - b) Fixes fats
 - c) Mgantiny
 - d) Maceration
 - e) Clearing
16. The following are not histo chemical fixatives except
- a) Cold absolute alcohol
 - b) Glutaraldehyde
 - c) For maldehyde vapour
 - d) Acetaldehyde
 - e) Acroetin
17. Cytoplasmic fixatives
- a) Don't contain acetic acid
 - b) Contain acetic acid
 - c) Simple fixative
 - d) Last for long
 - e) Causes haemolysis
18. Simple fixative include
- a) 10% formal saline
 - b) Formal sublimate
 - c) Zenker's fluid
 - d) Bouins fluid
 - e) Osmium tetroxide
19. Formaline as a fixative
- a) Causes dermatitis and sinusitis
 - b) Decalcification
 - c) Neutralization
 - d) Precipitatia
 - e) Dehydration
20. Degeneration stages changes include
- a) appear in nuclear and cytoplasm
 - b) Tissues
 - c) Skin
 - d) Organ
 - e) System
21. Necrobiotic processes include
- a) Post mortem

- b) Putrefaction
- c) Autolysis
- d) Cytolysis
- e) Cathepsing

22. Autolysis is due to the following

- a) Bacteria action
- b) Enzyme action
- c) Cell death
- d) Cell growth
- e) Respiration

23. Putrefaction is caused by

- a) Enzyme
- b) Bacteria
- c) Cell aging
- d) Disease tissue
- e) Fixation

24. Post mortem changes can be prevented by

- a) Fixation
- b) Mitosis
- c) Karyorhexis
- d) Cytolysis
- e) Decalcification

25. Chemical substances to prevent putrefaction and autolysis are

- a) Decalcifying fluids
- b) Fixatives
- c) Pigments
- d) Embedding media
- e) Clearing agents

26. A granular reticulum may be found in

- a) Liver cells
- b) Bone cells
- c) Teeth
- d) Brain
- e) Skin

27. Lysosomes perform

- a) Digestive functions
- b) Conductivity
- c) Selectivity
- d) Diffusion
- e) Respiration

28. Example of a cytoplasmic inclusion include

- a) Haemoglobin
- b) Chromatin
- c) Nucleoli
- d) Epithelial cells
- e) Nuclei

29. The following are not mitotic cell division stages except

- a) Meiosis
- b) Locomotion
- c) Diplosomes
- d) Chromatids
- e) Telephase

30. Regenerative process of a dying cell is

- a) Necrobiosis
- b) Cytomorphosis
- c) Diffusion
- d) Osmosis
- e) Metabolism

31. Ectoderm layer will not give rise to the following except

- a) Epithelia of skin
- b) Lymphatic glands
- c) Blood cells
- d) Cardiac
- e) Urethra

32. The following are not living characteristics of protoplasm except

- a) Respiration
- b) Movement
- c) Homeostasis
- d) Mutation
- e) Free surface

33. Cytoplasmic substances include

- a) Organelles
- b) Diamin
- c) Nucleolus
- d) Chromatin granules
- e) Nuclear membrane

34. The following do not describe endoplasmic reticulum except

- a) Agranular
- b) Argastroplasm
- c) Glycoprotein
- d) Nucleoplasm
- e) Basophilic

35. Endoplasmic reticulum synthesizes
- Glucose
 - Glycogen
 - Protein
 - Lipids
 - Energy
36. The following are not among the 4 primary tissues except
- Mesoderm
 - Endoderm
 - Ectoderm
 - Basal membrane
 - Nervous
37. Fundamental germ layers include
- Muscular
 - Connective
 - Mesoderm
 - Nervous
 - Epithelium
38. Abnormal anatomy is also called
- Cross anatomy
 - Pathology
 - Organopathology
 - Cytopathology
 - Standard anatomy
39. One of the branches of histology is
- Cytology
 - Vertebrate histology
 - Embryology
 - Biochemist
 - Animal histology
40. Histological procedures for preparation of materials for diagnosis are called
- Histological techniques
 - Impression smears
 - Blapsy
 - Cytosmears
 - FNA techniques

SECTION B

1. a) Define the following terms giving one example
(i) Fixation
(ii) Dehydration
(iii) Clearing
(iv) Post chromatization
(v) Impregnation

(10marks)
- b) Outline histological technique that aid in disease diagnosis **(5marks)**
- c) Describe briefly about picric acid **(5marks)**

2. a) Outline characteristics of a good fixative **(10marks)**
- b) Describe postmortem changes **(10marks)**

3. You are working in a histology lab and you residence tissue biopsies in fixatives from the clinics. Discuss what happens in your histology lab when receiving such specimens.

(20marks)