



# TECHNICAL UNIVERSITY OF MOMBASA

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FACULTY OF APPLIED AND HEALTH SCIENCES

DEPARTMENT OF MEDICAL SCIENCES

**UNIVERSITY EXAMINATION FOR:**

DMLS

AML 2301: HISTOLOGY II.

END OF SEMESTER EXAMINATION

**SERIES: AUG 2019**

**TIME: 2 HOURS**

## **Instructions to Candidates**

You should have the following for this examination

*-Answer Booklet, examination pass and student ID*

This paper consists of Choose Nochoose Sect/Quest. AttemptChoose instruction.

**Circle the correct answer in section A.**

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## **SECTION A: (40 Marks)**

1. Examples of neutral dyes include

- a. Eosin
- b. Giemsa stain
- c. Leishman stain
- d. Analine blue

2. Vital staining is applicable to

- a. Fixed tissues
- b. Dead tissues
- c. Living tissues
- d. Nuclear elements

3. Haemozon pigments come as a result of
- Infection with filarial worms
  - Fixation in formalin
  - Infection with malaria
  - Infection with amoeba
4. 'Stropping' a microtome means
- Sharpening on a stone
  - Smoothing after sharpening
  - Fixing a microtome
  - Removing the microtome knife
5. Which of the following is a tissue block holder during sectioning
- Hone
  - Tissue tek
  - Coupling jars
  - Glass rods
6. DPX is miscible with
- 20% ethanol
  - Distilled water
  - Dioxane
  - Chloroform
7. Which of the following is used to aid in histological studies
- Chromotrope
  - Spectroscope
  - Microtome
  - Colorimeter

8. The following are dehydrants in tissue processing except

- a. Toluene
- b. Dioxane
- c. Isopropyl alcohol
- d. Acetone

9. Embedding media in histology include

- a. Paraffin wax
- b. Pyridine
- c. Versene
- d. Starch paste

10. Decalcifying fluids in histology includes

- a) Formic acid
- b) Trichloroacetic acid
- c) Zeokarb 225
- d) Electrophoresis

11. Mayers egg albumin in histology contains

- a) Gelatin
- b) Resins
- c) White part of an egg
- d) Crystal of thymol

12. Microtome knife sharpening employ one of the following methods

- a) Hand sharpening
- b) Bevel use
- c) Computerized
- d) Chemical use

13. The following is not used in histology during tissue processing

- a) Paraffin wax
- b) Pellets
- c) Knife
- d) Saw

14. The major role of histology in hospitals are

- a) Blood transfusion
- b) Sensitivity testing
- c) Diagnostic services
- d) Medical legal

15. Histopathological techniques involves the following

- a) Preparing and examining of smears
- b) Preserving and processing
- c) Receiving and recording
- d) Disposal and incineration

16. Picric acid is used as

- a) Fixative
- b) Differentiator
- c) Decalcifier
- d) Dehydrant

17. 10% formal saline contains

- a) Xylene
- b) Sodium chloride
- c) Mercuric chloride
- d) Sodium carbonate

18. Properties of glacial acetic acid include

- a) Solidifying at -700C
- b) Precipitate nuclear proteins
- c) Boiling at 00C
- d) Damage microtome

19. The following are histological embedding media

- a) Paraffin wax
- b) Celloidin
- c) Pyridine
- d) Sabourouds

20. Clearing reagents include the following

- a) Xylene
- b) Cedar wood oil
- c) Dioxane
- d) Ethyl alcohol

21. Physical theory of Biological staining depends on

- a) Adsorption
- b) Density
- c) Ionization
- d) Osmosis

22. Peterfi's double embedding is recommended for

- a) Eye embedding
- b) Skin embedding
- c) Brain embedding
- d) Liver embedding

23. Post mordanting applies to

- a) Autopsies
- b) Re staining
- c) Primary fixation
- d) Secondary fixation

24. The main function when 'bringing section to water' during staining is

- a) Remove paraffin wax
- b) Remove fixative
- c) Remove alcohol
- d) The dehydrate tissue

25. Dehydration is defined as

- a) Removal of water from a tissue using xylene
- b) Removal of alcohol from a tissue, using xylene
- c) Removal of water using ascending grades of alcohol
- d) Tissue processing

26. Vacuum embedding is especially recommended for

- a) Heart
- b) Embryo
- c) Lung
- d) Spleen

27. When two hydrogen atoms are displaced by oxygen from a benzene ring, the following is formed

- a) Nitrobenzene
- b) Azo-coupling
- c) Auratia
- d) Quinone

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31. the endoderm layer gives rise to

- a. epithelia of skin
- b. epithelia of nose
- c. epithelia of bladder
- d. epithelia of eye

32. Resinous mountants include the following

- a) Canada Balsam
- b) Xam
- c) Apathy's media
- d) Farrant's media

33. Reticulin fibres can be demonstrated by
- Verhoeff's iron haematoxyline
  - Gordon and Sweet's method
  - Orcein stain
  - Fouchet's test
34. Artifact pigments are
- Endogenous pigments
  - Fixation pigments
  - Mask cellular details
  - Autogenous pigments
35. The dye that is extracted from the stigma of *Crocus sativus* is
- Saffron
  - Carmin
  - Litmus
  - Haematoxylin
36. The following are used for ripening haematin except
- Potassium permanganate
  - Hydrogen peroxide
  - Sodium iodide
  - Calcium chloride
37. The following is an example of vapour fixatives
- Acetic acid
  - Glutaraldehyde
  - Ethyl ether
  - Carbon dioxide



38. The volume of the fixative used should be

- a. 20 times the size of the tissue
- b. Over flowing
- c. 10-15 times the size of the tissue
- d. Half of the container used

39. After removal of tissue from the body, tissues should be put at what temperature if fixation is not immediate?

- a. Room temperature
- b. 22 °c
- c. 4 °c
- d. 37 °c

40. The acid formed after use of a formaldehyde containing fixative can be neutralized by:

- a. Magnesium carbonate
- b. Calcium acetate
- c. Decalcification
- d. Impregnation

**SECTION B: (40 Marks)**

41. Write short note on;
  - a. Types of microtomes (10 marks)
  - b. Microtome knives (10 marks)
42. Discuss the different types of pigments in histology and how they are removed (20 marks)
43. A piece of bone tissue biopsy is sent to the laboratory in a fixative; discuss the stages it will under go until the results are out (20marks)