



TECHNICAL UNIVERSITY OF MOMBASA

FACULTY OF APPLIED AND HEALTH SCIENCES

DEPARTMENT OF MEDICAL SCIENCES

UNIVERSITY EXAMINATION FOR:

DMLS

AML 2301: HISTOLOGY II.

END OF SEMESTER EXAMINATION

SERIES: DECEMBER 2016

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.

Section A

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
 - a. Infection with filarial worms
 - b. Fixation in formalin
 - c. Infection with malaria
 - d. Infection with amoeba
4. 'Stropping' a microtome means
 - a. Sharpening on a stone
 - b. Smoothing after sharpening
 - c. Fixing a microtome
 - d. Removing the microtome knife
5. Which of the following is a tissue block holder during sectioning
 - a. Hone
 - b. Tissue tek
 - c. Coupling jars
 - d. Glass rods
6. DPX is miscible with
 - a. 20% ethanol
 - b. Distilled water
 - c. Dioxane
 - d. Chloroform

7. Which of the following is used to aid in histological studies

- a. Chromotrope
- b. Spectroscope
- c. Microtome
- d. 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 -70°C
- b) Precipitate nuclear proteins
- c) Boiling at 100°C
- 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

- a) Verhoeff's iron heamatoxyline
- b) Gordon and sweet's method
- c) Orcein stain
- d) Fouchet's test

34. Artifact pigments are

- a) Endogenous pigments
- b) Fixation pigments
- c) Mask cellular details
- d) Autogenous pigments

35. The dye that is extracted from the stigma of *Crocus sativus* is

- a) Saffron
- b) Carmine
- c) Litmus
- d) Haematoxylin

36. The following are used for ripening haematin except

- a) Potassium permanganete
- b) Hydrogen peroxide
- c) Sodium iodide
- d) Calcium chloride

37. The following is an example of vapour fixatives

- a. Acetic acid
- b. Glutaraldehyde
- c. Ethyl ether
- d. Carbon dioxide

38. The volume of the fixative used should be

- a. 20 times the size of the tissue
- b. Overflowing
- 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

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 undergo until the results are out
(20marks)