

TECHNICAL UNIVERSITY OF MOMBASA

FACULTY OF APPLIED AND HEALTH SCIENCES

DEPARTMENT OF MEDICAL SCIENCES

UNIVERSITY EXAMINATION FOR:

DEGREE

AML 4309 : HISTOPATHOLOGY

SPECIAL/ SUPPLIMENTARY EXAMINATIONS

SERIES: SEPTEMBER 2018

TIME: 2 HOURS

DATE: Pick 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 **TWO** Section(s). Attempt ALL questions.

Circle the correct answer in section A.

Section A

1. Which one of the following is not a characteristic of benign tumors?
 - A) Benign tumors resemble the tissue of origin and are well differentiated
 - B) Benign tumors are well circumscribed and have a capsule
 - C) Benign tumors remain localized to the site of origin
 - D) Benign tumors does not resemble the tissue of origin
 - E) Benign tumors are slow growing
2. Which one of the following is not a means of decalcification?
 - A) Electrolysis
 - B) Mineral acids
 - C) Ion exchange resins
 - D) Chelating agents
 - E) Staining
3. The following are criteria of a good decalcifying solution except?
 - A) Complete removal of calcium

- B) Complete removal of water
 - C) Absence of damage to tissue
 - D) Non-impairment of subsequent staining techniques
 - E) Reasonable speed of decalcification
4. Which one of the following is not a microtome knife?
- A) Plane wedge
 - B) Cambridge rocker
 - C) Biconcave
 - D) Tool edge
 - E) Plane-concave
5. Which one of the following is used for honing?
- A) Arkansas
 - B) Horse skin
 - C) Cambridge rocker
 - D) Crystat
 - E) Carborundum paste
6. Which one of the following is used for stropping?
- A) Belgium black vein yellow
 - B) Carbondum
 - C) Arkansas
 - D) Carborundum paste
 - E) Camel brush
7. The following fault causes sections clinging to knife except?
- A) Block too large
 - B) Static electricity
 - C) Knife edge dirty
 - D) Knife dull
 - E) Knife tilt too vertically
8. Which one of the following is not a type of microtome?
- A) Cambridge rocker microtome
 - B) Sliding microtome
 - C) Rotary microtome
 - D) Carbondum microtome
 - E) Freezing microtome
9. The following are examples of natural dyes except?
- A) Haematoxylin
 - B) Cochineal
 - C) Picric acid

- D) Orcein
- E) Saffron

10. Which one of the following is not a criteria of a good routine nuclear stain?

- A) It should selectively stain the nuclei and the cytoplasm
- B) It should be cumbersome
- C) It should be simple
- D) It should be short
- E) It should stain connective tissue in different shades of colour

11. Staining time for haematoxylin stains depends on the following except

- A) Age of haematoxylin
- B) Type of tissue
- C) Personal taste
- D) Type of haematoxylin
- E) Mordant

12. Which one of the following is the most commonly used synthetic mountant?

- A) D.P.X
- B) Ethanol
- C) Hexane
- D) Distilled water
- E) Oil immersion

13. Which one of the following is not an example of dichromate fixative?

- A) Clamper's fluid
- B) Muller's fluid
- C) Ethanol
- D) Regaud's fluid

14. Xylene is used mainly as?

- A) Mountant
- B) Fixative
- C) Rinsing agent
- D) Clearing agent
- E) Stain

15. Artificial pigment include

- A) Malaria
- B) Melanin
- C) Calcium
- D) Lead
- E) Copper

16. Endogenous pigment include

- A) Formalin
- B) Mercuric chloride
- C) Melanin
- D) Silica
- E) Lead

17. Exogenous pigment include

- A) Calcium
- B) Uric acid
- C) Copper
- D) Chromed deposit
- E) Silver

18. Methods for determining the end point decalcification include the following except

- A) Feeling and bending
- B) X- ray method
- C) Probing with pins
- D) Staining
- E) Chemical test

19. Dehydrating agents include the following except

- A) Acetone
- B) Butyl alcohol
- C) Dioxane
- D) Ethyl alcohol
- E) Formalin

20. Which one of the following is used for impregnating tissues?

- A) Ester wax
- B) D.P.X
- C) Fats
- D) Aniline Oil
- E) Water- insoluble waxes

21. Advantages of water-soluble waxes include the following except?

- A) There is no need for dehydration and clearing
- B) They cause little shrinkage
- C) They are useful for work on enzymes and lipids
- D) The block must be kept in a dry atmosphere
- E) The tissue are not exposed to high temperature

22. Paraffin wax additives include

- A) Ester wax

- B) Bees wax
- C) Gelatin
- D) Agar
- E) Celloidin

23. Following are factors influencing the rate of impregnation except?

- A) Heat
- B) Agitation
- C) Viscosity
- D) Vacuum
- E) Light

24. Dyes are chemically classified according to their chromophore grouping which one is not a chromophore group?

- A) Oxazin dyes
- B) Nitro dyes
- C) Tetrazoles dyes
- D) Eosin dye
- E) Thiazin dyes

25. The alum haematoxylin stains in common use are the following except?

- A) Mayers haematoxylin
- B) Celestin blue haematoxylin
- C) Harris haematoxylin
- D) Cole's haematoxylin
- E) Delafields haematoxylin

26. The following bacteria can be demonstrated in tissues

- A. Mycobacterium tuberculosis
- B. E. hystolytica
- C. Fungi
- D. Aids virus
- E. Cryptococcus

27. Fungi in tissues can be demonstrated mainly by

- A. Methanamine silver technique
- B. Papanicolon technique
- C. Giemsa technique
- D. HIE technique
- E. ZN technique

28. The following bacteria can be demonstrated in tissues

- A. Mycobacterium tuberculosis
- B. E. hystolytica
- C. Fungi

- D. Aids virus
 - E. Cryptococcus
29. Fungi in tissues can be demonstrated mainly by
- A. Methanamine silver technique
 - B. Papanicolon technique
 - C. Giemsa technique
 - D. HIE technique
 - E. ZN technique
30. In a museum laboratory Kaiserling solution II can be used for
- A. Colour restoration
 - B. Fixing
 - C. Mounting
 - D. Differentiation
 - E. Staining

SECTION B

31. a. Discuss out the points to be considered when acquiring, preparing and storing staining solutions (20MK)
32. a. Describe the laboratory diagnosis of cancer (10mk)
- b. Define the following terms (10mk)
 - i) Post fixation
 - ii) Post-mordanting
 - iii) Washing out
 - iv) Secondary fixation
 - v) Histological pigments