



# TECHNICAL UNIVERSITY OF MOMBASA

---

FACULTY OF APPLIED AND HEALTH SCIENCES

DEPARTMENT OF MEDICAL SCIENCES

**UNIVERSITY EXAMINATION FOR:**

BMLS

AML 4309: HISTOPATHOLOGY.

END OF SEMESTER EXAMINATION

**SERIES: APRIL 2016**

**TIME: 2 HOURS**

**DATE:**

## **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. Which of the following is not a dehydrating agent?
  - A. Dioxane
  - B. Acetone
  - C. Phenol
  - D. Chloroform
  - E. Isopropanol
  
2. Which one of the following cannot initiate apoptosis?
  - A. Radiation
  - B. Drugs
  - C. Cytotoxic T – Lymphocytes
  - D. Inflammation
  - E. Hormones

3. Which one of the following is not an endogenous cause of cell injury?
  - A. Genetic defects
  - B. Hormones
  - C. Cytokines
  - D. Toxins
  - E. Metabolites
  
4. Which of the following is not a cellular adaptation mechanisms?
  - A. Atrophy
  - B. Hypertrophy
  - C. Hyperplasia
  - D. Metaplasia
  - E. Anaplasia
  
5. Which of the following is not a clearing agent?
  - A. Cedar wood oil
  - B. Limonene
  - C. Butanol
  - D. Benzene
  - E. Chloroform
  
6. Which of the following is not a main form of necrosis?
  - A. Fibroid necrosis
  - B. Liquefactive necrosis
  - C. Fibrous necrosis
  - D. Fat necrosis
  - E. None of the above
  
7. Which one is not an aim of inflammation
  - A. Eliminate cause of injury
  - B. Repair consequences of injury
  - C. Neutralize cause of injury
  - D. Limit spread of infection
  - E. Cause tissue injury
  
8. Which one is not a feature of an exudate?
  - A. They appear turbid
  - B. They have a high protein concentration
  - C. Result from injury of mesothelium
  - D. They have numerous neutrophils
  - E. They have a low protein concentration

9. Which one of the following includes the plasma derived mediators of inflammation?
- A. Kinin system
  - B. Clotting system
  - C. Fibrinolysis system
  - D. Complement system
  - E. All of the above
10. Which of the following fixative is ideal for electron microscopy?
- A. 40% formalin
  - B. 95% Alcohol
  - C. Glutaraldehyde
  - D. Mercuric salts
  - E. Zenkers fluid
11. The absolute increase in number of cells in an organ is?
- A. Hypertrophy
  - B. Hyperplasia
  - C. Atrophy
  - D. Metaplasia
  - E. Dysplasia
12. Chronic inflammation occurs in the following conditions \_\_\_\_\_
- A. Non healing/ persistent acute inflammation
  - B. Continuous exposure to noxious substances
  - C. Foreign materials
  - D. Transplant rejection
  - E. All of the above
13. Which feature reliably differentiates malignant from benign tumors?
- A. Size of tumour
  - B. Site of tumour
  - C. Formation of capsule
  - D. Invasiveness and metastasis
  - E. All of the above
14. Which of the following is appropriate stain for demonstrating amyloids?
- A. Congo – Red stain
  - B. Masson Trichrome stain
  - C. Masson Fontana stain
  - D. Von Kissastin
  - E. PAS
15. Which of the following statement is true of benign tumors?
- A. Fast growth
  - B. Numerous abnormal mitoses
  - C. Invasive into surrounding tissues
  - D. Few mitoses
  - E. Atypical pleomorphic nuclei

16. Which one of the following is not true about formalin pigment?
- A. Appears brown to black
  - B. Forms when acid formalin reacts with haemoglobin
  - C. Seen in tissues rich in blood
  - D. Restricting fixation time leads to development of artifact
  - E. Can be removed by treating section with saturated picric acid prior to staining
17. Which one of the following is an example of neutral dye?
- A. Eosin
  - B. Giemsa stain
  - C. Leishman stain
  - D. Aniline blue
  - E. Field stain
18. Which of the following is the vital stain applicable to?
- A. Fixed tissues
  - B. Dead tissues
  - C. Living tissues
  - D. Nuclear element
  - E. None of the above
19. What does “Stropping” a microtome knife mean?
- A. Sharpening on a stone
  - B. Smoothing after sharpening
  - C. Fixing a microtome
  - D. Removing the microtome knife
  - E. Greasing the microtome knife
20. Which one of the following is a tissue block holder?
- A. Hone
  - B. Tissue tek
  - C. Coupling jars
  - D. Glass rods
  - E. Wax basin
21. Which one of the following is miscible with DPX?
- A. 20% ethanol
  - B. Distilled water
  - C. Dioxane
  - D. Chloroform
  - E. None of the above
22. Which one of the following is not a dehydrant used in tissue processing?
- A. Toluene
  - B. Dioxane
  - C. Isopropyl alcohol
  - D. Acetone
  - E. Butanol

23. Which of the following is an embedding media in histopathological study?
- A. Paraffin wax
  - B. Pyridine
  - C. Versene
  - D. Starch paste
  - E. Chloroform
24. Which of the following is an example of a decalcifying fluid?
- A. Formic acid
  - B. Trichloroacetic acid
  - C. Zenkar fluid
  - D. Acetone
  - E. Butanol
25. What is picric acid used for in histological techniques?
- A. Fixative
  - B. Differentiator
  - C. Decalcifier
  - D. Dehydrant
  - E. Bluing agent
26. What does the physical theory of biological staining depend on?
- A. Adsorption
  - B. Density
  - C. Ionization
  - D. Osmosis
  - E. Impregnation
27. Which of the following is post mordanting applied to?
- A. Autopsies
  - B. Re-staining
  - C. Primary fixation
  - D. Secondary fixation
  - E. None of the above
28. What is the main aim of “bringing section to water” during staining?
- A. Remove paraffin wax
  - B. Remove fixative
  - C. Remove alcohol
  - D. Dehydrate tissue
  - E. Remove water from tissue
29. Vacuum embedding is especially recommended for tissue from\_\_\_\_\_
- A. Heart
  - B. Embryo
  - C. Lung
  - D. Spleen
  - E. Brain

30. What are artifact pigments?
- A. Endogenous pigments
  - B. Fixation pigments
  - C. Mask cellular details
  - D. Autogenous pigments
  - E. Melanin pigments

**Section B**

31. (A) Describe characteristics of a good fixative. **(10marks)**
- (B) Describe the chemical test procedure for determination of end –point of decalcification. **(10marks)**
32. (A) Describe in brief the steps involved in tissue processing in the Histology Laboratory. **(10marks)**
- (B) Outline the Haematoxylin and Eosin staining procedure for histological specimen study. **(10marks)**