



**TECHNICAL UNIVERSITY OF MOMBASA**

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**FACULTY OF APPLIED AND HEALTH SCIENCES**

**DEPARTMENT OF MEDICAL SCIENCES**

**UNIVERSITY EXAMINATION FOR:**

**CERTIFICATE IN MEDICAL LABORATORY SCIENCES**

**AML 1107: HISTOLOGY I**

**SPECIAL SUPPLEMENTARY EXAMINATION**

**SERIES: SEPT. 2017**

**TIME: HOURS**

**DATE: SEPT. 2017**

**Instructions to Candidates**

You should have the following for this examination

*-Answer Booklet, examination pass and student ID*

This paper consists of section A and section B . Attempt All questions

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

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SECTION A

Q1. The study of diseased body tissue is called

- A. Pathology
- B. Histopathology
- C. Cytology
- D. Physiology

Q2. The study of the morphology of the body organs by the use of naked eyes is

- A. Histology
- B. Anatomy
- C. Gross anatomy
- D. Biology

- Q3. Sources of histological samples includes the following except
- A. Culture media
  - B. Biopsies
  - C. Autopsies
  - D. Experimental animals
- Q4. Putrefaction can be stopped by the using of the following method except
- A. Fixatives
  - B. Freezing
  - C. Heating tissue at 57C
  - D. Staining
- Q5 .Aim of histopathology includes the following except
- A. To make diagnosis
  - B. To grade the tumour
  - C. To establish the stage of the disease
  - D. To store specimen for future reference
- Q6. Gynecological samples includes the following except
- A. Pap smear
  - B. Vaginal smear
  - C. Endocervical smear
  - D. Sputum smear
- Q7. The most abundant bimolecules of cell membrane is
- A. Carbohydrate
  - B. Phospholipids
  - C. Proteins
  - D. Cholesterol
- Q8. Functions of cell membrane except
- A. Is a selectively permeable membrane for some materials
  - B. Maintain the integrity of the cell
  - C. Is responsible for cell reproduction
  - D. It allows nerve impulse conduction and muscles contraction
- Q9. Main tissue types found in the human body includes the following except
- A. Epithelial tissue
  - B. Integumentary tissue
  - C. Muscular tissue
  - D. Nervous tissue
- Q10. The powerhouse of the cell is

- A. Ribosome
- B. Lysosome
- C. Mitochondria
- D. Peroxisomes

Q11. The cytoplasmic organelle that contains digestive enzymes is

- A. Lysosomes
- B. Centrosome
- C. Chromatin body
- D. Ribosome

Q12. The proper sequence of mitotic cell division is

- A. Anaphase – metaphase – telophase – prophase
- B. Telophase – prophase – metaphase – prophase
- C. Prophase – telophase – metaphase- anaphase
- D. Prophase – metaphase- anaphase – telophase

Q13. Sex chromatin is best seen during

- A. Prophase
- B. Metaphase
- C. Anaphase
- D. Telophase

Q14. Factors determined the fixatives to be used includes the following except

- A. Urgency for examination
- B. The availability of the fixative
- C. Structure and inclusion to be demonstrated
- D. Staining procedure to be used

Q15. Tissue after removal from the body for histological investigation they should be fixed in fixatives  
After

- A. Washing in normal saline
- B. 24hours in refrigerator
- C. Immediately
- D. Clearing

Q16. Tissues are fixed for the following reasons except

- A. To stop autolysis and putrefaction
- B. To make the tissue non infectious
- C. To make it transparent
- D. To maintain the tissue to its life like state

Q17. Fixatives that preserve cell products are

- A. Nuclear fixatives
- B. Cytoplasmic fixatives
- C. Cytological fixatives
- D. Histochemical fixatives

Q18. Smears are fixed by

- A. Formalin
- B. Alcohols
- C. Flemmings fluid
- D. Zenker solution

Q19. Histological specimen should be collected in the

- A. EDTA
- B. Normal saline
- C. Transport medium
- D. Formalin

Q20. Purpose of washing out the tissue in running water after fixation is

- A. To remove oxidizing agent
- B. To allow post chromitazation
- C. To enhance decalcification
- D. To improve some staining procedure

Q21. Pathological deposits of calcium may be found in the following regions except

- A. Tuberculosis tissues
- B. Cancerous tissue
- C. Heart muscles
- D. Nervous tissue

Q22. Selected tissue slice is suspended in the decalcifying solution by the means of

- A. Forceps
- B. Needle
- C. Thread
- D. Waxed thread

Q23. Non chemical assessment of decalcification of tissue is by

- A. Microscopic examination
- B. X – ray examination
- C. Use of ion exchange resins
- D. Examination of the tissue with naked eyes for tissue consistency

Q24. Chemical used to check the end point of chemical decalcification of tissue is

- A. Ammonium oxalate

- B. Sodium chloride
- C. Copper sulphate
- D. Citrate

Q25. Purpose of clearing tissue is

- A. To remove foreign particles
- B. To remove water from tissue
- C. To increase refractive index of the tissue
- D. To harden the tissue

Q26. Clearing agents includes the following except

- A. Xylene
- B. Acetone
- C. Chloroform
- D. Cedar wood oil

Q27. The waxes commonly used for impregnation of tissue have melting points in the range between

- A. 22C and 25C
- B. 50 and 60C
- C. 2C and 8C
- D. 80C and 100C

Q28. The time for wax impregnation depends on

- A. The amount of water in the tissue
- B. The fixative used
- C. The consistency of the tissue
- D. Stain method to be used.

Q29. Decrease in the processing time in reagent in the automatic tissue processors is due to

- A. Constant agitation
- B. Safety mechanism
- C. Automatic transfer
- D. Thermostatically controlled heating of wax

Q30. Paraffin wax cut tissue sections are floated in

- A. Alcohols
- B. Ether
- C. Water bath
- D. Acid

Q31. Tissue from frozen sections are embedded on

- A. Celloidin
- B. Gelatin
- C. Paraffin wax
- D. Low viscosity nitrocellulose

Q32. Crumbling of tissue sections during sectioning is due to

- A. Embedding tissue in very soft wax
- B. Tilt of knife is too great
- C. Knife is blunt
- D. Knife or block holder is loose.

Q33. Microtome that is used to prepare sections from unfixed tissue is

- A. Sliding microtome
- B. Rotary microtome
- C. Base sledge microtome
- D. cryostat

Q34. Wedge-shaped profile of a microtome knife is described as

- A. Plan on both sides
- B. Hollow ground on both sides
- C. Hollow ground on one side
- D. Plan on both sides with a steep cutting edge.

Q35. The process of grinding of metal from the knife edge with an abrasive substance until the edge is sharp and straight is called

- A. Beveling
- B. Trimming
- C. Honing
- D. Stropping

Q36. The post mortem change characterized by stiffening and contraction of the muscles is called

- A. Livor mortis
- B. Rigor mortis
- C. Autolysis
- D. Putrefaction

Q37. After death the body loses heat progressively at the rate of about

- A. 1.5°C per hour
- B. 5°C per hour
- C. 0.5°C per hour
- D. 3°C per hour

Q38. The postmortem cooling of the body that takes place after death is

- A. Livor mortis
- B. Algor mortis
- C. Rigor mortis
- D. Hypostasis

Q39. The intercellular substance of the cell includes the following except

- A. Collagen fibres

- B. Fluids
- C. Endoplasmic reticulum
- D. Elastic fibres

Q40. Frozen section are useful when one want to demonstrate the following except

- A. Fats in the section
- B. Enzymes
- C. When one want to study neurological structures
- D. Bile pigments

#### SECTION B.

Q1. Describe different types of epithelia cells, their function and where they are found (20marks)

Q2. (a) Discuss the factors influencing fixation (12 marks)

(b) Give disadvantages of using mercuric chloride as simple fixative (8 marks)

Q3. (a) Describe the following first three stages of tissue processing:

- Tissue reception
- Dissection
- Trimming

( 10 marks)

(b) Describe how dehydration of tissue by alcohol is done (10 marks)