



# THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE

(A Constituent College of Jkuat)

*Faculty of Applied & Health Sciences*

DEPARTMENT OF MEDICAL SCIENCES

**CERTIFICATE IN MEDICAL LABORATORY SCIENCE (CMLS 10J)**

**END OF SEMESTER EXAMINATION**

**AML 1144: HISTOLOGY**

**SERIES: AUGUST/SEPTEMBER 2011**

**TIME: 2 HOURS**

**Instructions to Candidates:**

You should have the following for this examination

- *Answer booklet*

Answer all questions correctly and negative marks (0.5) will be deducted to each wrong answer,

Some questions may have more than **TWO** answers

This paper consist of **FIVE** printed pages

## SECTION A

1. The cell organelles are made up of
  - A. Proteins
  - B. Enzymes
  - C. Water
  - D. Ground substances
2. A group of cells performing a similar function is called
  - A. Organ
  - B. Zygote
  - C. System
  - D. Tissue
3. Histology can be defined in the broadest sense as the;
  - A. Study of living and non living things
  - B. Study of the morphology of living organisms
  - C. Study of structure and form of living things
  - D. Study of dead tissues
4. The study of abnormal anatomy is called
  - A. Histology
  - B. Cytology
  - C. Pathology
  - D. Organology
5. The main cause of autolysis change is
  - A. Bacteria that had caused the disease in the tissue
  - B. Cathepsins
  - C. Ptyaline
  - D. Carboxypeptidase
6. Chromotization of tissues is done immediately after fixation of tissues in the following
  - A. Formaldehyde
  - B. 10% formal saline
  - C. 40% formaldehyde
  - D. Zenker's fluid
7. Cytoplasmic organelles include the following
  - A. Karyosome
  - B. Glycogen vacuole
  - C. Plasma membrane
  - D. Mitochondria
8. The fixative that inhibit haematoxylin staining
  - A. Picric acid
  - B. Osmium tetroxide
  - C. Formaline
  - D. Chromic acid

9. Fixatives are affected by temperature as follows
  - A. Increased action at high temperatures
  - B. Decreased action at low temperatures
  - C. Increased action at low temperatures
  - D. Decreased action at high temperatures
  
10. Dehydration is
  - 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
  
11. The following are examples of clearing reagents
  - A. Ethyl alcohol
  - B. Xylene
  - C. Cedarwood oil
  - D. Dioxane
  
12. Respiration refers to the exchange of gases which take place between
  - A. The nose and the lungs
  - B. The alveoli and the bronchi
  - C. The lungs and the heart
  - D. The blood and the lungs
  
13. A group of compound fixatives that fixes general tissue structure are called
  - A. Secondary fixatives
  - B. Microanatomical
  - C. Cytoplasmic
  - D. Cytological
  - E.
  
14. Embedding media in histology include
  - A. Sabourounds
  - B. Pyridine
  - C. Paraffin wax
  - D. Celloidin
  
15. Properties of glacial acetic acid include
  - A. Solidifying at 17°C
  - B. Precipitate nuclear proteins
  - C. Boiling at 0°C
  - D. Damage microtome knife
  
16. The ectoderm layer gives rise to
  - A. Epithelia of digestive tract
  - B. Epithelia of respiratory tract
  - C. Epithelia of skin
  - D. Epithelia of surface of cornea and conjunctiva

17. Histochemical fixatives are used to preserve
- A. Hormones
  - B. Cholesterol
  - C. Lipids
  - D. Enzymes
18. Specialization of cells to tissues and organs is
- A. Histogenesis
  - B. Histo
  - C. Histomeric
  - D. Histology
19. Prophase stage of mitotic cell division is characterized by
- A. DNA and RNA replication
  - B. Disappearance of spindle
  - C. Two daughter cells appearance
  - D. Condensation of chromosomal material
20. Progressive degenerative changes is
- A. Necrobiosis
  - B. Coagulation
  - C. Putrefaction
  - D. Autolysis
21. Picric acid is used as
- A. Fixative
  - B. Differentiation
  - C. Decalcifying agent
  - D. Natural dye
22. Histological embedding moulds include
- A. Tissue tek
  - B. Ienkhard
  - C. Forceps
  - D. Enamel kettle
23. The major role histology plays in a hospital is
- A. Testing new drugs
  - B. Assisting blood transfusion
  - C. Diagnostic services
  - D. Discovering new facts
24. Histopathology refers to
- A. Study of tissue structures
  - B. Study of diseased tissues
  - C. Studying normal body tissues
  - D. Studying cells undergoing mitosis

25. Post fixation in histology means
- A. Preserving mitochondria and myelin sheath
  - B. Fixing enzymes
  - C. Remove fatty enzymes
  - D. Exposing proteins from proper fixation
26. The following are decalcifying agents except
- A. Ebner's fluid
  - B. Xylene
  - C. 10% formal saline
  - D. Formic acid
27. Microscopy can be defined as
- A. Study of living things
  - B. Enlargement of objects
  - C. Magnifying very minute objects that are not visible to the naked eyes
  - D. Study of electrons

## **SECTION B – (ESSAY 60 MARKS)**

### **Question One**

- a) Draw and label human cell structures (10 marks)
- b) Discuss post mortem changes (10 marks)

### **Question Two**

- a) Outline characteristics of a good fixative (10 marks)
- b) Describe
- (i) Preparation 10% formal saline (2 marks)
  - (ii) Advantages and disadvantages (8 marks)

### **Question Three**

Discuss briefly chronological steps involved when biopsy or autopsy specimens are received at the histology laboratory (20 marks)