



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 best defines histopathology?
 - a. The study of tissues
 - b. The study of cells
 - c. The study of neoplasms
 - d. The study of diseases
 - e. The study of tissues affected by diseases
2. The following factors will affect fixation except
 - a. pH
 - b. Osmolarity
 - c. Size of the specimen
 - d. Colour of the specimen
 - e. Temperature

3. The special stain for the demonstration of iron is
 - a. Elastin
 - b. PAS
 - c. Sudan black B
 - d. Prussian blue
 - e. Indian ink
4. The bulging of muscles of a body builder results from
 - a. Hyperplasia of muscle fibers
 - b. Atrophy of muscle fibers
 - c. Metaplasia
 - d. Hypertrophy of muscle fibers
 - e. Dysplasia
5. Which of the following is not a cause of vertical scratches on ribbons during microtomy?
 - a. Knife edge dirty
 - b. Nicks in knife edge
 - c. Too little knife tilt
 - d. Sutures
 - e. Mercuric chloride crystals
6. Invasiveness is a feature of
 - a. Benign tumours
 - b. Dysplasia
 - c. Neoplasms
 - d. Malignant tumours
 - e. Metaplasia
7. What is the name given to carcinomas that grow in a glandular pattern?
 - a. Sarcoma
 - b. adenocarcinoma
 - c. Chondroma
 - d. Fibroma
 - e. Haematoma
8. The extent to which tumour cells resemble normal cells morphological is
 - a. Invasion
 - b. Metastasis
 - c. Anaplasia
 - d. Differentiation
 - e. Dysplasia
9. Decalcification of tissue and bone is done by the following methods except
 - a. Mineral acids
 - b. Microincineration
 - c. Ion exchange resins
 - d. Chelating agents
 - e. Electrolysis

10. Which of the following is not a clearing agent
- Toluene
 - Cedar wood oil
 - Methane
 - Carbon tetrachloride
 - Aniline oil
11. Which of the following staining procedure is correctly matched
- Sudan black stain – glycogen
 - PAS – acid fast bacilli
 - Modified Giemsa – *Helicobacter pylori*
 - Elastin stain – fat
 - Manson trichrome – fungi
12. The following are benign tumours except
- Fibroma
 - Osteoma
 - Chondroma
 - Lipoma
 - Seminoma
13. The following is true of necrosis except
- It is a programmed cell death
 - Caseous necrosis results from tuberculous infection
 - Cytoplasmic changes include eosinophilia
 - There is cell digestion by lytic enzymes
 - Karyolysis occurs
14. The following are correctly matched except
- Transitional epithelium – lines the bladder
 - Simple squamous epithelium – lines the capillaries
 - Ciliated epithelium – lines the respiratory tract
 - Transitional epithelium – lines the uterine cervix
 - Stratified squamous epithelium – lines the skin
15. Which of the following is not a dehydrating agent
- Ethanol
 - Xythanol
 - Dioxane
 - Xylene
 - Acetone
16. In pregnancy, the uterus undergoes the following
- Atrophy and hypoplasia
 - Metaplasia and atrophy
 - Hyperplasia and hypertrophy
 - Anaplasia and atrophy
 - Dysplasia and metaplasia

17. What is the name given to the process by which cells are destroyed through lysing by enzymatic action?
- Karyohexis
 - Karyolysis
 - Pyknosis
 - Autolysis
 - Putrefaction
18. The following are simple fixatives except
- Zenker's fluid
 - Mercuric chloride
 - Potassium dichromate
 - Osmium tetroxide
 - Acetone
19. The following are criteria of a good fixative except
- It must have a good effect on staining
 - It must fortify the tissue against the harsh solutions used for processing
 - It must activate enzymes
 - It must cause sudden death to tissue cells
 - It must preserve cell in a life like manner
20. Which of the following is not a component of Heidenhain's Susa fixative
- Mercuric chloride
 - Chromic acid
 - Formaldehyde
 - Trichloroacetic acid
 - Distilled water
21. Which of the following is not a fixative pigment?
- Barret's pigment
 - Formaline pigment
 - Mercuric chloride pigment
 - Chrome deposits
 - Pink disease artifact
22. Which of the following is not an example of an acid used for decalcification
- Nitric acid
 - Hydrochloric acid
 - Formic acid
 - Sulphuric acid
 - Trichloroacetic acid
23. Which of the following is not a method used for determining the end point of decalcification
- X-ray method
 - Feeling and bending
 - Cutting with a knife
 - Probing with pins
 - Chemical test

24. Which of the following factors is not required during tissue impregnation to increase penetration rate by paraffin wax?
- Agitation
 - Volume
 - Heat
 - Viscosity
 - Vacuum
25. Viruses known to be carcinogenic in humans include all the following except
- Human Papilloma virus
 - Epstein Barr virus
 - Herpes Simplex virus
 - Hepatitis B virus
 - Hepatitis A virus
26. The standard size of a histological section is
- 20 – 25 microns
 - 10 – 20 microns
 - 3 – 5 microns
 - 5 – 10 microns
 - Upto 30 microns
27. Which of the following is taken up by nucleus during staining of histological section in H/E staining procedure?
- Eosin stain
 - Both haematoxylin and eosin
 - Haematoxylin stain
 - More of eosin stain and less of haematoxylin
 - None of the two stains
28. Apoptosis has a key role in all of the following except
- Cell death due to hypoxia
 - Developmental involution in the embryo
 - Cell death in tumours
 - Cell death in viral infection
 - Involution of thymus
29. The following can cause cell injury except
- Hypoxia
 - Genetic defects
 - Anaphylaxis
 - Mitochondria
 - Bacteria
30. Which of the following is not true of dehydration?
- Specimen is immersed in a series of ethanol solutions of increasing concentration
 - It is done after tissue fixation
 - It is done before cleansing
 - Specimen is immersed in a series of ethanol solutions of decreasing concentration

e. Ethanol is miscible with water.

Section B

31. (A) Briefly discuss tissue repair, regeneration and healing of a wound **(10 marks)**

(B) Describe the specimen collection, handling and preparation for routine histopathology diagnosis
(10 marks)

32 (A) Discuss the advantages and disadvantages of water soluble waxes **(10 marks)**

(B) Describe the operations and components of a cryostat microtome **(10 marks)**