



# TECHNICAL UNIVERSITY OF MOMBASA

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FACULTY OF APPLIED AND HEALTH SCIENCES

DEPARTMENT OF MEDICAL SCIENCES

**UNIVERSITY EXAMINATION FOR:**

DEGREE

AML 2312 : CYTOLOGY AND CYTOLOGICAL TECHNIQUES

END OF SEMESTER EXAMINATION

**SERIES: DECEMBER 2016**

**TIME: 2 HOURS**

**DATE:** Pick Date Dec 2016

## 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.**

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### Section A

1. The 1st stage of autolysis where the cell nucleous condenses is known as
  - a. Karyolysis
  - b. Necrosis
  - c. Pyknosis
  - d. Karyorrhexis
2. cytological smears can best be demonstrated by
  - a. verhoets
  - b. Weigets
  - c.papanicolou
  - d.Perl's Prussian Blue

3. Cervical smears for cytological examination are collected using
  - a. Platinum wire loop
  - b. Straight wire
  - c. Ayre spatula
  - d. Cotton swabs
4. . Cytoplasmic organelles include the following except
  - a. Karyosomes
  - b. Glycogen vacuoles
  - c. Mitochondria
  - d.centrosomes
5. . The following is a function of the nucleus
  - a. Hereditary transfer
  - b. metabolic transfer
  - c. diffusion
  - d. Filtration
6. The following are stages in mitosis except
  - a. telophase
  - b.anaphase
  - c. diplotene
  - d. metaphase
7. Fixative of choice for cytology smears is
  - a.chromic acid
  - b. 95% ethanol
  - c. Kaiserling solution III
  - d. acetone

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8. Diagnostic cytology as a science reveal cell that have exfoliated from
  - a. epithelial surfaces
  - b. various tissues
  - c. embalmed tissue
  - d. macerated tissue
9. Diagnostic cytology methods of specimen collection includes
  - a. exfoliative cytology from natural secretions
  - b. body fluids only
  - c. open biopsy
  - d. Embalmed body tissue
10. The following are advantages of pap smears except
  - a. painless and simple
  - b. detect cancerous and precancerous cells
  - c. no cellular distortion
  - d. infectious
11. cytological specimens include all the following except
  - a. sputum
  - b. CSF
  - c. Stool
  - d. blood
12. Pap smear for cytology should be collected under what instructions
  - a. non douched vagina for atleast a day
  - b. avoid intravaginal drugs, coitus and menstrual bleeding
  - c. douching as normal
  - d. coitus to continue
13. Cytological fixatives include
  - a. denatured alcohol
  - b. ether alcohol mixture
  - c. formalin
  - d. mercuric chloride
14. An adequate sample
  - a. provides a representation of appropriate zone
  - b. provides accurate representation of significant abnormalities present
  - c. presence of endocervical columnar cells
  - d. adequate specimen
15. Cytology laboratory should have the following areas except
  - a. reception, specimen collection room
  - b. processing, staining and reporting
  - c. infection prevention
  - d. conference

16. Which of the following is a cytological staining method
- Papanicolou
  - May Grunwald
  - Eosin
  - Haematoxylin
17. The importance of keeping smears for 3-5 years is
- quality control
  - follow up
  - inspection
  - resource mobilization
18. Inflammatory smear can reveal
- marked leucocytosis
  - pathogenic micro organisms
  - polychromasia
  - fine chromatin
19. The following is true of necrosis except
- is programmed cell death
  - caseous necrosis result from tuberculous infection
  - there is cell digestion by lytic enzymes
  - karyolysis occurs
20. In pregnancy the uterus undergoes
- atrophy and hypoplasia
  - metaplasia
  - hyperplasia and hypertrophy
  - anaplasia
21. Viruses known to be carcinogenic in humans include all of the following except
- human papilloma virus
  - Herpes simplex virus
  - epstein Barr virus
  - hepatitis B virus
22. Apoptosis has a key role in all the following except
- cell death in tumours
  - developmental involution in the embryo
  - cell death due to hypoxia
  - cell death in viral infections
23. The following are causes of cell injury except
- hypoxia
  - genetic defects
  - bacteria
  - mitochondria

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24. Which of the following is not part of a nucleoli
- nucleus
  - chromatin granules
  - nuclear membrane
  - lysosomes
25. Karyohexis is
- contraction of cell nucleus
  - increase in protoplasmic viscosity
  - nucleus fragmentation and disappearance
  - chromatin and nucleus disappearance
26. Endocervical columnar epithelial cells
- nuclei lie eccentrically
  - cytoplasm stains pale blue
  - orange cytoplasm
  - nucleus condensation
27. In fine needle aspiration, the lesion is assumed to be
- bilateral
  - homogenous
  - unilateral
  - infiltrative
28. Needle used for FNA are gauge
- 30-35
  - 10-15
  - 22-25
  - less than 20
29. During necrosis the cell undergoes all the following except
- karyohexis
  - pyknosis
  - multinucleation
  - karyolysis
30. Atrophy is best defined as
- shrinkage of the size of cell
  - increase in cell number
  - increase in the size of cell
  - one adult cell type is replaced by another adult cell type.
31. Sputum cytology is important for
- It is one of the respiratory function tests
  - Detecting lung cancer
  - To diagnose whooping cough
  - ZN staining only

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32. Senescence is also referred to as
- Maturity
  - Cytomorphosis
  - Cell ageing
  - Autolysis
33. Which of the following is used for collection of pap smears
- Ayre spatula
  - Applicator stick
  - Forceps
  - Metallic rod
34. Fungal infection is seen in pap smears as
- Long spindle rods
  - Gram positive rods
  - Spores or hyphae
  - Cotton balls
35. For detection of cancer of the kidney in cytology;
- Kidney biopsy is recommended
  - FNA is recommended
  - Urine cytology is recommended
  - Kidney ultra sound is recommended
36. HPV can be detected in
- Breast smears
  - Buccal smears
  - Tissue smear
  - Pap smears
37. Cytoplasmic stains in cytology include
- EA50
  - Potassium ferrocyanide
  - Van Gieson
  - Harris Haematoxylin
38. Scrapping the lateral wall of the vagina can be used in cytology studies for
- Detecting TV
  - Hormonal function
  - Detecting fungi
  - Detecting cancer cells
39. Papanicolaou staining reagents include
- Malachite green
  - Carbol fuchsin
  - Alum haematoxylin
  - Eosin

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40. Non-gynaecological specimens include

- a. Stool
- b. Biopsy
- c. Autopsy
- d. Cerebral spinal fluid

ESSAY

- 41.
  - a. Write short notes on characteristics of malignant cells (10marks)
  - b. Discuss fixatives in cytology giving their advantages and disadvantages (10 marks)
- 42.
  - a. Outline the Papanicolaou staining procedure in cytology (10marks)
  - b. Discuss mitotic cell division (10marks)
- 43. Discuss the Bethesda reporting system for Pap smears (20 marks)

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