

TECHNICAL UNIVERSITY OF MOMBASA

FACULTY OF APPLIED AND HEALTH SCIENCES

DEPARTMENT OF MEDICAL SCIENCES

UNIVERSITY EXAMINATION FOR:

DEGREE

AML 4310: CYTOLOGY AND CYTOPATHOLOGY

SPECIAL/ SUPPLEMENTARY EXAMINATIONS

SERIES: SEPTEMBER 2018

TIME: 2 HOURS

DATE: Pick Date Sep 2018

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.

Section A

1. Which of the following is not a nuclear feature of malignancy
 - a. Macronucleoli
 - b. Normal mitotic figure
 - c. Anisocytosis
 - d. Nuclear moulding
 - e. Coarse chromatin
2. Air dried cytology specimens are best stained by
 - a. Diff quick
 - b. H & E stain
 - c. Papanicolaou stain
 - d. Alcian blue stain
 - e. Congo red
3. The following are exfoliative cytology specimens except
 - a. Pap smear
 - b. Imprints
 - c. Endoscopy brush specimens
 - d. Breast biopsy

- e. Cerebral spinal fluid
- 4. Which special stain is correctly matched
 - a. PAS- melanin
 - b. Alcian blue- amyloid
 - c. Ziehl Neelsen- pneumocystis
 - d. Prussian blue- iron
 - e. Giemsa- fungi
- 5. The following are risk factors for cervical cancer except
 - a. HPV infection
 - b. Smoking
 - c. DES use
 - d. Immunosuppression
 - e. Lactobacilli
- 6. The nucleus of a cell gives the following information
 - a. Provides information about the health of the cell
 - b. Gives information about the origin of the cell
 - c. Provides information on the possible function of the cell
 - d. Gives information on the age of the cell
 - e. The functions of the cell
- 7. An appropriate fixative for cytodiagnosis should perform all the following except
 - a. Penetrate cells rapidly
 - b. Stop cellular and microbial growth
 - c. Minimize cell shrinkage
 - d. Activate autolytic enzymes
 - e. Maintain morphologic integrity
- 8. The following infections can be diagnosed on pap smears except
 - a. Herpes virus infection
 - b. Candidiasis
 - c. Trichomoniasis
 - d. Human papilloma virus infection
 - e. Typhoid
- 9. HPV infection is established in which layer of squamous epithelium
 - a. On the nuclear surface
 - b. Superficial squamous cells
 - c. Intermediate squamous cells
 - d. Basal cells
 - e. Fat cells
- 10. Which of the following statements is true of HPV
 - a. It is an RNA virus
 - b. It is enveloped
 - c. It is a member of herpes virus family
 - d. High risk types are 16, 18.
 - e. Low risk types are 16, 18.
- 11. The following are advantages of liquid based cytology except

- a. Ability to prepare multiple slides
 - b. Ability to perform ancillary tests
 - c. Permits automated screening
 - d. Reduction of blood and mucus on the slide
 - e. Cost of the procedure is to the patient
12. Appropriate voided urine specimen should be
- a. Obtained 3-4 hours after last urination
 - b. First morning specimen should be avoided
 - c. Should be 25-100ml
 - d. Mid stream clean catch
 - e. Collected over night urine
13. Common causes of trasudates are
- a. Malignancy
 - b. Pneumonia
 - c. Congestive cardiac failure
 - d. Rheumatoid pleuritis
 - e. Trauma
14. The following are true when collecting pap smears except
- a. Collect smears two weeks after menstruation
 - b. Patients should not use vaginal medication before collection
 - c. No douching before collection
 - d. Should be collected early in the morning
 - e. Specimens should be collected before application of acetic acid
15. Which of the following statements is true of exudates
- a. Have a low protein concentration
 - b. Results from an imbalance of hydrostatic and oncotic pressure
 - c. Can be caused by cirrhosis
 - d. Results from injury to mesothelium
 - e. Have a low lactate dehydrogenase
16. Which of the statement is true of Spray fixative
- a. Consists alcohol base and carbowax
 - b. Carbowax does not provide protective coating on the cells
 - c. Carbowax should not be removed before staining
 - d. Contain lysing agents
 - e. Slides are put in alcohol to remove carbowax
17. The following is true of candida species except
- a. Dimorphic fungus
 - b. Often appear as hypal spearing through epithelial cell clumps
 - c. Associated with perinuclear clearing of squamous cells
 - d. Forms fuffy cotton balls with radiating filamentous structures
 - e. May be seen as spores or pseudohyphae on pap smears.
18. The following is true of cytology except
- a. Branch of pathology that diagnoses disease at cellular level
 - b. Aids in the diagnoses of tumors

- c. Helpful in the diagnosis of infectious diseases
 - d. Aids in screening of diseases
 - e. Branch of pathology that diagnoses disease at tissue level
19. A good staining method has the following features except
- a. Nuclear detail is well defined
 - b. Transparency of cytoplasm is assured
 - c. Different types of cells can be differentiated
 - d. Nuclear detail is poorly defined
 - e. Stability of stain with time
20. Which of the following is a nuclear stain in cytology
- a. Orange G
 - b. Eosin Y
 - c. Light green
 - d. Haematoxylin
 - e. Fuchsin
21. Accuracy of cytologic examination depends on
- a. Quality of collection
 - b. Quality of preparation of smear
 - c. Staining
 - d. Interpretation of smear
 - e. Size of the lesion
22. Which of the following statement best describes stem cells
- a. Embryonic stem cells are the only stem cells available
 - b. Adult stem cells can only be extracted from the bone marrow
 - c. Blood is not a source of stem cells
 - d. Stem cells do not differentiate
 - e. The two properties of stem cell are self-renewal and potency
23. Which of the following state ment best describe metaplasia
- a. Is the shrinkage of the size of the cell
 - b. Is characterized by an increase in the cell number
 - c. Is a reversible change
 - d. Is retarded growth
 - e. Is an increase in the size of the cell
24. During apoptosis, the nucleus undergoes
- a. Disrupted
 - b. Enzymatic digestion
 - c. Fragmentation into nucleosome size
 - d. Pyknosis
 - e. Swelling
25. Which of the following is not an example of an internal agent that causes cell injury
- a. Faulty structure of essential molecules
 - b. Acquired immune disease
 - c. Autoimmune disorders
 - d. Disturbance of cell growth

- e. Metabolic disorders
26. Which of the following is a non-gynecological sample in a cytology laboratory
- a. Stool
 - b. Urine
 - c. Core biopsy
 - d. Autopsy
 - e. Bone tissue
27. scrapping from the lateral wall of the vaginal are used for
- a. Detecting fungal elements
 - b. Hormonal function
 - c. Detecting malignant cells only
 - d. Detecting trichomonas
 - e. Analysis of hormonal function
28. Inflammatory reaction is important because
- a. Causes more harm to the injury
 - b. Helpful in cancer studies
 - c. Helps in formation of superficial cells
 - d. Does not remove injurious agent
 - e. Protect against disease
29. Which of the following is a source of cell injury
- a. Cytomorphosis
 - b. Necrobiosis
 - c. Putrefaction
 - d. Biological agents
 - e. Autolysis
30. "Unsatisfactory smear for evaluation" as used by Bethesda reporting system indicates
- a. Smears has all the cells required
 - b. Patient identification is lacking
 - c. Smear is adequate
 - d. All patient information is included
 - e. Smear is well prepared.

SECTION B

- 31.
- a. Describe cell death (10 marks)
 - b. Discuss the advantages and disadvantages of liquid based cytology (10 marks)
- 32.
- a. Write short notes on cervical cancer diagnosis (10 marks)
 - b. Describe the differences between transudate and exudates (10 marks)