



**TECHNICAL UNIVERSITY OF MOMBASA**

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FACULTY OF APPLIED AND HEALTH SCIENCES

DEPARTMENT OF MEDICAL SCIENCES

**UNIVERSITY EXAMINATION FOR:**

BACHELOR OF MEDICAL LABORATORY SCIENCE

AML 4310 : CYTOLOGY AND CYTOPATHOLOGY

SPECIAL SUPPLEMENTARY EXAMINATION

**SERIES:** AUGUST 2017

**TIME:** 2 HOURS

**DATE:** Pick Date Sep 2017

**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. A liquid based pap smear is considered to have adequate cellularity according to Bethesda 2001 if
  - a. It has 6000 squamous cells and no detectable endocervical cells
  - b. It has over 8000 squamous cells with over 75% obscured by inflammation
  - c. It has 2000 well visualized squamous cells and five groups of endocervical cells with each group having more than 10 endocervical cells
  - d. It has only endocervical cells and blood
  - e. It has only endometrial cells
2. Slides, requisitions and reports in a cytology laboratory should be retained for
  - a. 10 years
  - b. 5 years
  - c. 2 years
  - d. 25 years
  - e. Indefinitely
3. Neuroendocrine cervical carcinomas are most commonly associated with
  - a. HPV 16

- b. HPV 18
  - c. HPV 45
  - d. HPV 31
  - e. HPV 14
4. As per the ASCCP guidelines women over 30 years of age
    - a. Should have an annual pap smear
    - b. Should have a pap smear every three years if three consecutive cytologies have been negative
    - c. Should have a HRHPV test annually and a pap every three years
    - d. Do not need to have a pap test as very little chance of getting dysplasia
    - e. should not do a pap test because they are immuned
  5. Choose the correct scenario
    - a. The bivalent HPV vaccine is required to be administered to all males 9 to 26 years of age
    - b. The quadrivalent HPV vaccine is recommended for all females aged 9 to 26 years provided they are still virgins
    - c. The quadrivalent HPV vaccine is recommended for all females aged 9 to 26 years provided their prevaccine HPV test is negative
    - d. The quadrivalent HPV vaccine is recommended for all females aged 9 to 26 years regardless of their sexual history, however the efficacy is highest in women with no history of prior sexual activity
    - e. The bivalent HPV vaccines is recommended for all females aged 9-26 regardless of their sexual activity
  6. Screening of pap smears begins at what age?
    - a. Teenage years
    - b. Six weeks after post partum
    - c. Within three years of onset of sexual activity
    - d. 65 years and above.
    - e. At any age so long as a woman has a cervix.
  7. The following are risk factors for cervical dysplasia except
    - a. HPV infection
    - b. Lacto bacilli infection
    - c. Multiple sexual partners
    - d. Early onset of sexual activity
    - e. Immuno compromised persons
  8. Which of the following is true of the cytoplasm of a cell.
    - a. Gives information about the origin of the nucleus
    - b. Gives information on the health of the cell
    - c. Gives information of the age of the cell
    - d. Gives information on the functions of the cell
    - e. Gives information on the onset of multiplication of a cell
  9. In routine processing of fluids the following is true except
    - a. Representative volume is centrifuged

- b. Glass tubes should be avoided
  - c. Normal saline can be added during centrifugation if quantity is little
  - d. Clots can be processed as cell blocks
  - e. Glass tubes should be used.
10. Alcohol fixed cytology smears
- a. Demonstrate nuclear details better
  - b. Are stained by diff quick
  - c. Are rapid (2-3 minutes)
  - d. Demonstrate cytological details better
  - e. Are stained with Giemsa
11. Which of the following is correctly matched with the epithelium that cover it
- a. Vagina - stratified squamous epithelium
  - b. Ectocervix - Stratified squamous epithelium
  - c. Endocervix - pseudo stratified cuboidal epithelium
  - d. Cervical canal - stratified squamous epithelium
  - e. Ecto vagina - pseudo stratified columnar epithelium
12. The following are causes of atrophic smears except
- a. Before Puberty
  - b. Pre-menopausal
  - c. Lactating woman
  - d. Corticosteroid therapy
  - e. Post-menopasal
13. The following are epithelial cells found in the female genitalia except
- a. Columnar epithelium
  - b. Stratified squamous epithelium
  - c. Glandular endometrial cells
  - d. Mesothelial cells
  - e. Stromal endometrial cells
14. The best site for taking samples for hormonal assessment is
- a. Ectocervix
  - b. Lateral mid-third vaginal surface
  - c. Outer wall of the vagina
  - d. Endocervix
  - e. Cervical canal
15. The following are effects of oestrogen hormone on the female genitalia except
- a. Proliferation of the vaginal squamous epithelium
  - b. Maturation of the superficial cells
  - c. Rapid desquamation of the upper layer of epithelium
  - d. Deposition of glycogen within the vaginal epithelium
  - e. A and C above only

16. The following factors will help normal vaginal acidity except
- Lactobacilli
  - Presence of intermediate cells
  - Presences of superficial cells
  - Normal levels of vitamin A
  - Normal levels of vitamin C
17. The following are reparative cellular changes on the nucleus except
- Post-necrotic nuclear change
  - Disturbance of chromatin distribution
  - Enlargement of nucleus
  - Infiltration
  - Multinucleated cells
18. Which of the following is not a protective reaction of the cervical epithelium against inflammation
- Leukoplakia
  - Hyperplasia
  - Pyknosis
  - Squamous metaplasia
  - Parakeratosis
19. The following statements are true about gonococcal vaginitis except
- It's a venereal infection
  - Caused by gram negative diplococci
  - Involves the cervix
  - Diagnosis is by the presence of diplococci inside or outside histocytes
  - Characterised by suppurative vaginal discharge.
20. The following statements are true about fixatives except
- Carnoy's fluid has acetic acid that haemolyses red cells
  - Over fixing in Carnoy's fluid results in loss of chromatin material
  - AAF fixative is ideal for cell block preparations
  - Coating fixatives have an alcohol base and carbowax
  - 100% methanol should not be used in cytology
21. Which of the following is not an appropriate laboratory safety measure
- Specimens should be prepared away from sitting areas
  - Avoid food in working areas
  - Dispose xylene in sinks
  - Keep proper functioning fire fighting system
  - Before disposing, contaminated utensils should be autoclaved.
22. The following are exfoliative cytology specimens, which is the odd one out
- Pap smear
  - Imprints

- c. Endoscopic brush cytology
  - d. Breast lump
  - e. Nipple discharge
23. The nucleus of a cell gives information on the
- a. The origin of the cell
  - b. Health of the cell
  - c. Possible functions of the cell
  - d. Age of the cell
  - e. Life span of the cell
24. An appropriate fixative for cytodiagnostic analysis should perform the following except
- a. Penetrate cells rapidly
  - b. Stop cellular and microbial growth
  - c. Minimize cell shrinkage
  - d. Activate autolytic enzymes
  - e. Maintain morphologic activity
25. The following infection can be diagnosed on cytology smears except
- a. HPV infection
  - b. Trichoniasis
  - c. Candidiasis
  - d. HIV infection
  - e. Herpes virus infection
26. Which of the following is true of Human papilloma virus
- 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.
27. Appropriate voided urine specimen
- a. Should be obtained 3-4 hours after last urination
  - b. First morning specimen
  - c. Should be 25-100mls
  - d. Midstream "clean catch" is recommended
  - e. Late night urine is the best
28. Fixation methods in cytology include all the following except
- a. Lysing fixation
  - b. Wet fixation
  - c. Spray fixation
  - d. Air drying
  - e. Wet fixation with subsequent air drying.
29. On pap smears cells covered by coccobacilli due to a shift in vaginal flora are due to

- a. Koilocytes
  - b. Clue cells
  - c. Navicular cells
  - d. cornflakes
  - e. Blue blobs
30. The following are true of candida albicans. Except
- a. Are dimorphic fungi
  - b. Often appear as hyphal spearing through epithelial cell clumps
  - c. Associated with perinuclear clearing of squamous cells
  - d. Forms furry cotton balls with radiating filamentous structures
  - e. May be seen as spores or pseudohyphae on pap smears.

#### Section B

31. a. Describe the features of necrosis (10 marks)
- b. Discuss transudates and their importance in clinical cytology (10 marks)
32. a. Describe the features of a satisfactory smear by the Bethesda reporting system (10 marks)
- b. "Fixation is of paramount importance in cytological preparations." Outline reasons to support this statement and mention five cytological fixatives. (10 marks)