REV-01
BMLT/15/20

2025/06

SET A

BACHELOR OF MEDICAL LABORATORY TECHNOLOGY
FOURTH SEMESTER
PATHOLOGY IV
BMLT – 405 [REPEAT]

[USE OMR SHEET FOR OBJECTIVE PART]

Duration: 3 hrs. **Full Marks: 70**

Objective

Time: 30 min. **Marks: 20**

Choose the correct answer from the following: *1×20=20*

1. Which dye is obtained from the bark of *Haematoxylum campechianum* tree
   a. Haematoxylin
   b. Toluidine blue
   c. Eosin Y
   d. None of these

2. What is the primary purpose of exfoliative cytology?
   a. To collect cells from deep tissue layers
   b. To analyze blood samples
   c. To perform surgical biopsies
   d. To diagnose conditions based on cellular morphology

3. Phosphotungstic Acid Hematoxylin is used for
   a. Amyloid
   b. Elastic Fibers
   c. Melanin
   d. None of these

4. Which of the following statements regarding interventional cytopathology is true?
   a. It involves the removal of large tissue samples for analysis.
   b. It is primarily used for non-diagnostic purposes.
   c. It allows for rapid on-site evaluation of cellular samples.
   d. It is not suitable for evaluating deep-seated lesions.

5. Which of the following statements about exfoliative cytology is true?
   a. It involves the removal of tissue using a biopsy needle.
   b. It is only applicable for diagnosing skin disorders.
   c. It relies on the examination of cells shed from body surfaces.
   d. None of these

6. Millipore technique is used for processing of
   a. Blood
   b. Urine
   c. Sputum
   d. None of these

7. Which of the following uses Aluminum sulphate as mordant
   a. Mayer's hematoxylin
   b. Ehrlich's hematoxylin
   c. Harris hematoxylin
   d. Gill's hematoxylin

8. Which of the following can be used for staining of carbohydrates
   a. Periodic acid Schiff
   b. Alcian blue
   c. Mucicarmine
   d. All of these

9. Who developed the Pap stain?
   a. Louis Pasteur
   b. George Papanicolaou
   c. Rudolf Virchow
   d. Wilhelm Roentgen

10. Which component of the Pap stain highlights acidic structures within the cells?
   a. Eosin
   b. Acetic acid
   c. Hematoxylin
   d. Lithium carbonate

11. Triple CVE smear contains sample from
   a. Ectocervix
   b. Endocervix
   c. Vagina
   d. All of these

12. Which of the following is a common indication for performing a fine needle aspiration (FNA) in cytopathology?
   a. Diagnosing cardiovascular diseases
   b. Routine health screening
   c. Evaluating suspicious breast lumps
   d. Monitoring blood glucose levels

13. Which of the following is a characteristic feature of malignant cells in cytopathology?
   a. High nuclear-to-cytoplasmic ratio
   b. Uniform nuclear size
   c. Well-defined cell borders
   d. Low mitotic activity

14. What is the optimal time required for fixation in cytology?
   a. Overnight fixation
   b. 15-30 seconds
   c. 15-30 minutes
   d. 24 hours

15. Direct smear can be prepared for which sample in cytopathology
   a. Urine
   b. Sputum
   c. Gastric lavage
   d. None of these

16. Which technique involves scraping cells from the lining of the bladder for cytological examination?
   a. Pap smear
   b. Bladder washings
   c. Bronchial brushing
   d. Endometrial biopsy

17. Grocott's Methenamine Silver stain is used for staining of
   a. Lipids
   b. Bacteria
   c. Fungi
   d. Amyloid

18. Which of the following is not a primary application of cytopathology?
   a. Genetic testing for hereditary disorders
   b. Cancer diagnosis and screening
   c. Infectious disease diagnosis
   d. Monitoring treatment response

19. In imprint cytology, cellular material is transferred onto a slide by
   a. Pressing the tissue surface onto the slide
   b. Cutting thin sections of tissue
   c. Dissolving the tissue in a solvent
   d. Scraping the tissue surface

20. Which of the following is a limitation of exfoliative cytology
    a. Inability to obtain sufficient cellular material
    b. Risk of tissue damage during sample collection
    c. Requirement for general anaesthesia
    d. High cost of equipment

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Descriptive

Time : 2 hrs. 30 min. Marks : 50

[Answer question no.1 & any four (4) from the rest]

1. Explain the classification of dyes. Describe the factors influencing staining. 5+5=10

2. Define cytopathology. Explain the branches of cytopathology. Describe the nuclear criteria of malignancy. 2+3+5 =10

3. Define amyloid. What are the application of special stains. Briefly discuss about progressive and regressive staining. 2+3+5 =10

4. Discuss briefly about cervical cytology.Describe the various collection techniques for respiratory sample and gastrointestinal sample in exfoliative cytology. 5+5=10

5. Explain the general procedure of FNAC. Write a short note on the advantages and complication of FNAC. 5+5=10

6. Describe in detail the numerous applications of diagnostic cytology. 10

7. Discuss briefly about mordant. Explain the dye-mordant complex of hematoxylin. Write the principle, procedure and interpretation of Sudan Black B stain. 2+3+5 =10

8. Discuss briefly about Pap smear. Write about PAP's stain, it's principle, staining procedure and interpretation. 5+5=10

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