



BRAINWARE UNIVERSITY

Term End Examination 2025-2026

Programme – DMLT-2023/DMLT-2024

Course Name – Cytopathology & Histopathology

Course Code - DMLT301

(Semester III)

LIBRARY
Brainware University
Barasat, Kolkata -700125

Full Marks : 60

Time : 2:30 Hours

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A

(Multiple Choice Type Question)

1 x 15=15

1. Choose the correct alternative from the following :

- (i) Choose the Mounting Agent.
 - a) DPX
 - b) Xylene
 - c) Alcohol
 - d) Paraffin wax
- (ii) Identify most commonly used dehydrating agent.
 - a) Acetone
 - b) Formic Acid
 - c) Alcohol
 - d) Denature spirit
- (iii) What is polychromatic stain ?
 - a) Stain with multiple dye
 - b) Stain with 2 dyes
 - c) Stain with 3 dyes
 - d) Stain for chromatin
- (iv) In Haematoxylin & Eosin Stain, Haematoxylin _____.
 - a) Stains the nucleus Blue
 - b) It is an acidic counterstain that stains the cytoplasm of mature keratinized cells
 - c) It stains the cytoplasm of mature squamous cells, nucleoli, Red blood cells, and cilia pink.
 - d) None of these
- (v) _____ stain needs Alcohol fixation.
 - a) MGG Stain
 - b) Leishman Stain
 - c) Papanicolaou Stain
 - d) H&E Stain
- (vi) FNAC is the removal of a sample of cells using _____.
 - a) Cervical spatula
 - b) Fine needle
 - c) Lumber Puncture needle
 - d) Swab
- (vii) Identify the most commonly used Fixative in tissue fixation is _____.
 - a) Zenkers Fluid
 - b) Formalin Sublimate
 - c) 10% Formalin
 - d) Alcohol
- (viii) Choose the most commonly used stain in the Histopathology Lab.

- a) PAS Stain b) PAP Stain
c) H & E Stain d) Perl Stain

(ix) Identify the Clearing Agent from the following.

- a) Absolute Alcohol
c) DPX
- b) Toluene
d) Mayers Albumin
- In aspiration cytology, what is the main advantage of using a fine needle compared to a larger needle for sampling?
- a) Fine needles are less painful for the patient.
c) Fine needles are less likely to cause complications.
- b) Fine needles can collect larger tissue samples.
d) Fine needles can be used for blood draws.

(xi) What is the role of clearing agents in the tissue processing?

- a) To remove fixatives from the tissue
- b) To act as an intermediary between dehydration and infiltration
- c) To enhance the staining of the tissue
- d) To preserve the tissue for future analysis

(xii) What does the term 'Grossing' refer to in the context of specimen processing?

- a) Transporting the specimen b) Inspecting the specimen
c) Labeling the specimen d) Storing the specimen

(xiii) What is the primary aim of decalcification in tissue preparation?

- a) To preserve the tissue structure
- b) To enhance the color of the tissue
- c) To increase the weight of the specimen
- d) To soften the tissue for a better section cutting

(xiv) Which acid is most commonly used for decalcification due to its speed and minimal distortion?

- a) Trichloroacetic acid
b) Acetic acid
c) Nitric acid
d) Formic acid

(xv) What is the purpose of embedding in tissue processing?

- a) To stain the tissue
b) To analyze the tissue
c) To cut tissue into thin sections
d) To preserve the tissue

Group-B

(Short Answer Type Questions)

$$3 \times 5 = 15$$

2. Describe the structure, location, and function of simple squamous epithelium. (3)
3. Explain the purpose of the Papanicolaou stain in cytology. (3)
4. Explain the importance of dehydration in tissue processing. (3)
5. Briefly classify the epithelial tissues. (3)
6. Compare and contrast between Mayers and Harris haematoxylin. (3)

OR

Distinguish between advantages and disadvantages of cryostat sectioning. (3)

Group-C

(Long Answer Type Questions)

$$5 \times 6 = 30$$

7. Explain the principle, procedure, and applications of hematoxylin and eosin (H&E) staining in routine histopathology. (5)
8. Provide an overview of Cryostat and its applications. (5)
9. Provide an in-depth analysis of microtomes, detailing their various types, mechanisms, and specific applications in histological. (5)
10. Discuss the functions and selection criteria for an ideal mounting medium in histotechnology. (5)
11. Explain the structural differences between the four basic types of tissues in the human body. (5)

12. Compare the structural and functional features of skeletal, cardiac, and smooth muscle tissues (5) in histological preparations.

OR

If you observed a tissue sample with flattened, elongated nuclei and no cilia, how would you (5) determine the epithelial type and probable location?

LIBRARY
Brainware University
Barasat, Kolkata -700125