

2025

**M.Sc. 3rd Semester Examination**  
**BIOMEDICAL LABORATORY SCIENCE**  
**AND MANAGEMENT**

**Paper : BML - 303**

**(Diagnostic Histotechnology and Cytotechnology)**

**Full Marks : 50**

**Time : Two Hours**

*The figures in the margin indicate full marks.*

*Candidates are required to give their answers  
in their own words as far as practicable.*

**Group - A**

**Answer any *four* questions :** **2×4=8**

1. Write the composition of Carnoy's fixative.
2. What are the purpose of embedding?
3. Name any two lipid stains.
4. Define immunohistochemistry.
5. What are infiltration and impregnation? **1+1**
6. What is cytology? Name any one fixative used in cytology. **1+1**

**P.T.O.**

( 2 )

**Group - B**

Answer any *four* questions :  $4 \times 4 = 16$

7. Write the steps of decalcification of bone.
8. Write the objectives of applying clearing agent in histology and mention its features.  $2+2$
9. Write schematically the hematoxylin and eosin staining procedure mentioning the required time for each step.
10. State briefly about normobaric and hypobaric embedding in tissue processing along with their importance.
11. Write the steps of tissue dehydration in tissue processing.  
Why graded dehydration is adopted?  $3+1$
12. Write the composition of Zenker fixative and mention its demerits.  $2+2$

**Group - C**

Answer any *two* questions :  $8 \times 2 = 16$

13. Discuss briefly on different hematoxylin stains used in histology. Define mordant mentioning its importance.  
How over-staining of hematoxylin can be managed?  
 $4.5+2+1.5$
14. Write the principle and procedure of Papanicolaou stain.  
Why this stain is used?  $(2+4)+2$

( 3 )

15. Write the principle of PAS reaction. State the steps of preparation of PAS reagent. State why only per iodic acid is used as oxidizing agent for this reaction. 2+4+2
16. What do you mean by antigen retrieval? Discuss briefly about peroxidase-antiperoxidase method used in immuno-histochemistry. Write the application of immuno-histochemistry. 2+4+2

**[Internal Assessment - 10 marks]**

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