

[LH 0415]

OCTOBER 2015

Sub. Code: 1264

**M.Sc. (MEDICAL LABORATORY TECHNOLOGY) DEGREE EXAMINATION**

**(From 2013-2014 Batch onwards)**

**SECOND YEAR**

**PAPER IV – TECHNIQUES IN HISTOPATHOLOGY AND CYTOLOGY**

*Q.P. Code : 281264*

**Time: Three Hours**

**Maximum: 100 marks**

**Answer ALL questions**

**I. Elaborate on:**

**(2 x 20 = 40)**

1. Write in detail about Romanowsky stains, mention the various types. Write about Leishman's staining technique.
2. What is the principle of immuno histochemistry? Enumerate the various stains. Write in detail about any one technique.

**II. Write Notes on:**

**(10 x 6 = 60)**

1. PAS stain and its application.
2. Stains used in cytology. Write in detail about PAP stains.
3. Principle of immuno fluorescence microscopy.
4. Enumerate the stains used for Amyloid.
5. Mention the fixtures used for museum specimens.
6. What is argentaffin and angyrophil stains.
7. What are reagents used in decalcification.
8. Enumerate the stains used to identify fungi.
9. Mention the stains used for haemosiderin, melanin and calcium.
10. Describe the principle and write in detail on stains for Reticulin.

\*\*\*\*\*

[LJ 1016]

OCTOBER 2016

Sub. Code: 1264

**M.Sc. MEDICAL LABORATORY TECHNOLOGY EXAMS  
SECOND YEAR  
PAPER IV – TECHNIQUES IN HISTOPATHOLOGY AND CYTOLOGY**

*Q.P. Code: 281264*

**Time: Three hours**

**Maximum: 100 Marks**

**I. Elaborate on:**

**(2 x 20 = 40)**

1. Explain the common characters of Romanosky's stain. Mention the names of various Romanosky's stains available and explain in detail the procedure and staining characteristics of blood cells in any one technique.
2. Explain the optical aberrations that can occur in microscopic lenses and how they are corrected.

**II. Write notes on:**

**(10 x 6 = 60)**

1. What is histochemistry?
2. What is the principle of fluorescent microscopy? Mention any one application.
3. Explain liquid based cytology.
4. Write in detail the procedure of PAS stain and mention its use.
5. Name any two stains for microorganisms and explain the procedure of any one.
6. Mention the mucin stains and describe the procedure of any one.
7. What is Autoradiography?
8. Trichrome stains and their uses.
9. Fixation in histopathology and museum technique.
10. Stains used for demonstration of hemosiderin and melanin.

\*\*\*\*\*

[LL 1017]

OCTOBER 2017

Sub. Code: 1264

**M.Sc. MEDICAL LABORATORY TECHNOLOGY EXAMS  
SECOND YEAR  
PAPER IV – TECHNIQUES IN HISTOPATHOLOGY AND CYTOLOGY**

*Q.P. Code: 281264*

**Time: Three hours**

**Maximum: 100 Marks**

**I. Elaborate on:**

**(2 x 20 = 40)**

1. Write a detail note on immuno-fluorescence and its protocol.
2. Write a detail note on museum techniques.

**II. Write notes on:**

**(10 x 6 = 60)**

1. Mention the stains used for hemosiderin, calcium and melanin.
2. Write a note on auto-radiography.
3. Write a note on decalcification and its protocol.
4. Write a note on Romannowsky stains.
5. Write a note on general microscopy.
6. Write a note on stain for elastic fibres.
7. Stain for microorganisms. Explain any one.
8. Write a note on amyloid stain.
9. Write a short note on antigen retrieval.
10. Write a note on Hematoxylin and eosin stain.

\*\*\*\*\*

[LN 1018]

OCTOBER 2018

Sub. Code: 1264

**M.Sc. MEDICAL LABORATORY TECHNOLOGY EXAMS  
SECOND YEAR  
PAPER IV – TECHNIQUES IN HISTOPATHOLOGY AND CYTOLOGY**

*Q.P. Code: 281264*

**Time: Three hours**

**Maximum: 100 Marks**

**I. Elaborate on:**

**(2 x 20 = 40)**

1. Discuss the principle, preparation, stages, staining technique of Haematoxylin and Eosin Stain.
2. Discuss automation in histopathology.

**II. Write notes on:**

**(10 x 6 = 60)**

1. Mounting of museum specimens.
2. Principle of AFB on Mycobacterium leprae.
3. Van Gieson technique: its principle, preparation and interpretation.
4. Gomori's Silver impregnation method: its principle, Preparation and interpretation.
5. Verhoeff's method for elastic fibres :- its principles preparation and interpretation.
6. Technique of sections cutting.
7. Honing and different types of hones employed and honing technique.
8. Sharpening of microtome knives.
9. Preparation and use of albuminized and starched slides.
10. Different types of microtomes.

\*\*\*\*\*

[LP 1019]

OCTOBER 2019

Sub. Code: 1264

**M.Sc. MEDICAL LABORATORY TECHNOLOGY EXAMS  
SECOND YEAR  
PAPER IV – TECHNIQUES IN HISTOPATHOLOGY AND CYTOLOGY**

*Q.P. Code: 281264*

**Time: Three hours**

**Maximum: 100 Marks**

**I. Elaborate on:**

**(2 x 20 = 40)**

1. Define Fixation. Classify and elaborate on the aims and function of an ideal fixative. Write a note on Automated Tissue Processor.
2. What is Exfoliative Cytology? Write a note on specimen collection, preservation, smearing technique and preparation of smears.

**II. Write notes on:**

**(10 x 6 = 60)**

1. What are the stains used for detection of Mucin. Write the principle, procedure and use of PAS stain.
2. Elaborate on the various Embedding Media used in Histopathology. Mention the technique of impregnation.
3. Write a note on Decalcifying agents.
4. What are the properties of a good clearing agent? Mention few clearing agents used in the Histopathology Laboratory.
5. Write a note on Automation in Histopathology.
6. Describe the various faults in section cutting and mention their remedial measures.
7. Write a note on stains used for elastic fibres.
8. Write a note on Bouin's Fixative.
9. What is the principle of Trichrome stain? Mention 2 examples with its uses.
10. Write the principle, procedure and use of Grocott-Gomori Methanamine Silver Stain (GMS).

\*\*\*\*\*

[LQ 1019]

NOVEMBER 2020

Sub. Code: 1264

(MAY 2020 EXAM SESSION)

**M.Sc. MEDICAL LABORATORY TECHNOLOGY**

**SECOND YEAR**

**PAPER IV: TECHNIQUES IN HISTOPATHOLOGY AND CYTOPATHOLOGY**

**Q.P. Code: 281264**

**Duration: 3 hrs**

**Total Marks: 100 marks**

**I. Elaborate notes on: (2 x 20 = 40)**

1. Write a note on Immuno Histo Chemistry with its uses. How does it differ from Immuno fluorescence Staining?
2. Elaborate on the Different Histo Chemical Stains used for Identification of Micro organisms. What is the most common Histo Chemical stain used for Identification of H.pylori?

**II. Write short notes on: (10 x 6 = 60)**

1. Classify Fixatives. What are the Aim and Functions of an Ideal Fixative?
2. Write the Principle, Procedure and uses of PAS Stain.
3. Write a note on Liquid Based Cytology. How does it differ from Conventional PAP Cytology?
4. Write a note on Progressive and Regressing Staining Methodology with suitable example.
5. What is a Clearing Agent? Mention the Properties and uses of clearing agent in Histopathology.
6. Mention the Formalin Fixatives used for Carbohydrates.
7. Write a note on Automation in Histopathology.
8. Write the principle, procedure and uses of Masson Trichrome stain.
9. Write a note of Freezing Microtome and its uses.
10. Write a note on Light Microscopy.

\*\*\*\*\*

**THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY**

[AHS 0321]

**MARCH 2021**

**Sub. Code: 1264**

**(OCTOBER 2020 EXAM SESSION)**

**M.Sc. MEDICAL LABORATORY TECHNOLOGY**

**SECOND YEAR (2011-2012 Regulation - From 2013-2014 onwards)**

**PAPER IV – TECHNIQUES IN HISTOPATHOLOGY AND CYTOPATHOLOGY**

***Q.P. Code : 281264***

**Time: Three hours**

**Answer ALL Questions**

**Maximum: 100 Marks**

**I. Elaborate notes on:**

**(2 x 20 = 40)**

1. Define Fixation. Classify Fixatives. Elaborate on the Aims and Function of an ideal fixative. Write a note on Formaldehyde with its uses.
2. What is the principle and function of Microscopy? Mention the various types of Microscopes. Elaborate on Light Microscope.

**II. Write Short Notes on:**

**(10x6 = 60)**

1. Write a note on Decalcification.
2. Write a note on the 'Faults' that can occur during Paraffin section cutting and mention the remedies for the same.
3. Principle, procedure and use of Papanicolaou stain.
4. What is the procedure for preparation of Schiff reagent?
5. Classify Mounting Media. What are the functions of a good mounting media?
6. Enumerate on stains used to identify Fungal elements.
7. Differentiate between Mordant and Accelerator, with suitable examples.
8. Classify Hematoxylin. What is Chemical Ripening? Write a note on preparation of Hematoxylin stain.
9. What is the use of Microtome? Mention the various types of Microtomes used in histopathology laboratory.
10. Mention the procedure for Cell block. What are its uses?

\*\*\*\*\*

**THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY**

[AHS 0921]

**SEPTEMBER 2021  
(MAY 2021 EXAM SESSION)**

**Sub. Code: 1264**

**M.Sc. MEDICAL LABORATORY TECHNOLOGY  
SECOND YEAR (2011-2012 Regulation - From 2013-2014 onwards)  
PAPER IV – TECHNIQUES IN HISTOPATHOLOGY AND CYTOLOGY  
*Q.P. Code : 281264***

**Time: Three hours**

**Answer ALL Questions**

**Maximum: 100 Marks**

**I. Elaborate notes on:**

**(2 x 20 = 40 )**

1. Mention the various Romanowsky stains. Enumerate on the uses and staining procedure.
2. What is Exfoliative Cytology? Write a note on the various Stains used in Cytology.

**II. Write Short Notes on:**

**(10 x 6 = 60)**

1. What are the types of Silver stains? Differentiate between Argyrophilic stain from Argentaffin stain with suitable examples.
2. Write a note on Papanicolaou stain. Mention its uses.
3. What are the uses of Photography in Histopathology?
4. Write a note on Museum Techniques.
5. What Histochemical stain is used for identification of Hemosiderin deposition? Mention its principle and procedure.
6. Write a note on stains used for detection of Amyloid deposits in tissue.
7. What is Bouin's fixative? Mention its uses.
8. Write a note on Embedding media.
9. Write a note on Decalcifying agents.
10. Write a note on Alcian Blue stain. Mention its uses.

\*\*\*\*\*

**THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY**

[AHS 0122]

**JANUARY 2022  
(OCTOBER 2021 EXAM SESSION)**

**Sub. Code: 1264**

**M.Sc. MEDICAL LABORATORY TECHNOLOGY  
SECOND YEAR (Regulation 2011-2012 & from 2013-2014 onwards)  
PAPER IV – TECHNIQUES IN HISTOPATHOLOGY AND CYTOLOGY  
*Q.P. Code : 281264***

**Time: Three hours**

**Answer ALL Questions**

**Maximum: 100 Marks**

**I. Elaborate notes on:**

**(2 x 20 = 40 )**

1. Explain the principle of Florescent microscopy and its application in Histopathology.
2. What is microtomy. What are the different types of microtomes available and their uses.

**II. Write Short Notes on:**

**(10 x 6 = 60)**

1. Various Decalcifying agents.
2. Microwaves and Histopathology.
3. What is the use and composition of Bouin's Fixative.
4. Write the principle, procedure and use of Grocott-Gomori Methanamine Silver Stain (GMS).
5. What do you mean by Antigen retrieval.
6. What are the Stains for melanin. Write the procedure for any one stain.
7. What are the Romanosky's stains and what is their common principle.
8. Immunohistochemistry Principle and uses.
9. Color restoration of museum specimens.
10. Polarising Microscope – Principle and uses in histopathology.

\*\*\*\*\*

**THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY**

[AHS 0522]

MAY 2022

Sub. Code: 1264

**M.Sc. MEDICAL LABORATORY TECHNOLOGY**  
**SECOND YEAR (Regulation 2011-2012 & from 2013-2014 onwards)**  
**PAPER IV – TECHNIQUES IN HISTOPATHOLOGY AND CYTOLOGY**  
*Q.P. Code : 281264*

**Time: Three hours**

**Answer ALL Questions**

**Maximum: 100 Marks**

**I. Elaborate notes on:**

**(2 x 20 = 40 )**

1. What are Romanosky's stains. Mention the names of various Romanosky's stains available and explain in detail the staining procedure and staining characteristics of blood cells and artifacts that can occur due to staining defects in any one technique.
2. Explain the uses and Principles of fluorescent microscopy in histopathology.

**II. Write Short Notes on:**

**(10 x 6 = 60)**

1. What is liquid based cytology and what is its use?
2. Write in detail the procedure of PAS stain and mention its use.
3. What is Autoradiography?
4. Define Fixation. What are the fixative agents used in histopathology and mention their specific uses.
5. Mention the various methods of decalcification and write any one protocol.
6. What are the stains used for demonstration of elastic fibres? Write the procedure for any one stain.
7. Stains for leprosy bacilli in tissues.
8. What are the methods available for demonstration of Amyloid? and what is the appearance of Amyloid?
9. What is the principle of Silver Impregnation Methods? Write the procedure of any one stain.
10. Elaborate on the various Embedding Media used in Histopathology.

\*\*\*\*\*

**THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY**

[AHS 1022]

**OCTOBER 2022**

**Sub. Code: 1264**

**M.Sc. MEDICAL LABORATORY TECHNOLOGY**

**SECOND YEAR (Regulation 2011-2012)**

**(Candidates admitted from 2013-2014 & 2020-2021 onwards)**

**PAPER IV – TECHNIQUES IN HISTOPATHOLOGY AND CYTOLOGY**

*Q.P. Code : 281264*

**Time: Three hours**

**Answer ALL Questions**

**Maximum: 100 Marks**

**I. Elaborate notes on:**

**(2 x 20 = 40 )**

1. Discuss the principle, preparation, stages, staining technique of Haematoxylin and Eosin Stain.
2. What is the principle and function of Microscopy? Mention the various types of Microscopes. Elaborate on Light Microscope.

**II. Write Short Notes on:**

**(10 x 6 = 60)**

1. PAS stain and its application.
2. Stains used in cytology. Write in detail about PAP stains.
3. Principle of immuno fluorescence microscopy.
4. Enumerate the stains used for Amyloid.
5. Name any two stains for microorganisms and explain the procedure of anyone.
6. Write a note on Decalcifying agents.
7. What is Autoradiography?
8. Trichrome stains and their uses.
9. Define fixation in histopathology and write a note on different fixatives.
10. Stains used for demonstration of hemosiderin and melanin.

\*\*\*\*\*

**THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY**

**[AHS 0523]**

**MAY 2023**

**Sub. Code: 1264**

**M.Sc. MEDICAL LABORATORY TECHNOLOGY  
SECOND YEAR (Candidates admitted from 2020-2021 onwards)  
PAPER IV – TECHNIQUES IN HISTOPATHOLOGY AND CYTOLOGY**

***Q.P. Code: 281264***

**Time: Three hours**

**Answer ALL Questions**

**Maximum: 100 Marks**

**I. Elaborate notes on:**

**(2 x 20 = 40 )**

1. Define Fixation. Classify and elaborate on the aims and function of an ideal fixative. Write a note on Automated Tissue Processor.
2. What is microtomy? What are the different types of microtomes available and their uses?

**II. Write Short Notes on:**

**(10 x 6 = 60)**

1. Write a note on Immunohistochemistry.
2. What is the principle of fluorescent microscopy? Mention any two applications.
3. Explain liquid based cytology.
4. Write in detail the procedure of PAS stain and mention its use.
5. Name any two stains for microorganisms and explain the procedure of anyone.
6. Write a note on electron microscopy.
7. Write a note on different types of haematoxylin stains.
8. Honing and different types of hones employed and honing technique.
9. Write a note on light microscopy.
10. Preparation and use of albuminized and starched slides.

\*\*\*\*\*

**THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY**

[AHS 1023]

**OCTOBER 2023**

**Sub. Code: 1264**

**M.Sc. MEDICAL LABORATORY TECHNOLOGY  
SECOND YEAR (From 2020-2021 onwards)  
PAPER IV – TECHNIQUES IN HISTOPATHOLOGY AND CYTOLOGY**

*Q.P. Code: 281264*

**Time: Three hours**

**Answer ALL Questions**

**Maximum: 100 Marks**

**I. Elaborate notes on:**

**(2 x 20 = 40 )**

1. Write a detail note on immuno-fluorescence and its protocol.
2. Discuss automation in histopathology.

**II. Write Short Notes on:**

**(10 x 6 = 60)**

1. Mention the stains used for hemosiderin and describe the procedure.
2. Write a note on auto-radiography.
3. Write a note on decalcification and its protocol.
4. Principle of AFB on Mycobacterium leprae.
5. Write a note on museum techniques.
6. Write a note on cryostat.
7. Stain for microorganisms. Explain anyone.
8. Write a note on amyloid stain.
9. Write a short note on antigen retrieval.
10. Write a note on Hematoxylin and eosin stain.

\*\*\*\*\*

**THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY**

[AHS 1024]

**OCTOBER 2024**

**Sub. Code: 1264**

**M.Sc. MEDICAL LABORATORY TECHNOLOGY  
SECOND YEAR (From 2020-2021 onwards)  
PAPER IV – TECHNIQUES IN HISTOPATHOLOGY AND CYTOLOGY**

*Q.P. Code: 281264*

**Time: Three hours**

**Answer ALL Questions**

**Maximum: 100 Marks**

**I. Elaborate on:**

**(2 x 20 = 40)**

1. Discuss automation in histopathology.
2. What is Exfoliative Cytology? Write a note on specimen collection, preservation, smearing technique and preparation of smears.

**II. Write Short Notes on:**

**(10 x 6 = 60)**

1. Describe the principle and write in detail on stains for Reticulin.
2. Name any two stains for microorganisms and explain the procedure of any one.
3. Technique of sections cutting.
4. Elaborate on the various Embedding Media used in Histopathology. Mention the technique of impregnation.
5. Write a note on Progressive and Regressing Staining Methodology with suitable example.
6. Classify Hematoxylin. What is Chemical Ripening? Write a note on preparation of Hematoxylin stain.
7. Enumerate on stains used to identify Fungal elements.
8. Classify Mounting Media. What are the procedure and functions of a good mounting media?
9. Mention the procedure for Cell block. What are its uses?
10. Principle, procedure and use of Trichrome stain.

\*\*\*\*\*

**THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY**

[AHS 1025]

**OCTOBER 2025**

**Sub. Code: 1264**

**M.Sc. MEDICAL LABORATORY TECHNOLOGY  
SECOND YEAR (From 2020-2021 onwards)  
PAPER IV – TECHNIQUES IN HISTOPATHOLOGY AND CYTOLOGY**

*Q.P. Code: 281264*

**Time: Three hours**

**Answer ALL Questions**

**Maximum: 100 Marks**

**I. Elaborate on:**

**(2 x 20 = 40)**

1. Write a note on Immuno Histo Chemistry with its uses. How does it differ from Immuno fluorescence Staining?
2. Discuss automation in histopathology.

**II. Write Short Notes on:**

**(10 x 6 = 60)**

1. Mention the mucin stains and describe the procedure of any one.
2. Stains used in cytology. Write in detail about PAP stains.
3. What is cytopsin and how is it used in sample preparation?
4. Describe the clearing step in histopathology and discuss commonly used clearing agents.
5. What are the causes and remedies of sectioning artifacts?
6. Differentiate between cytology and histology.
7. Honing and different types of hones employed and honing technique.
8. Describe the use and maintenance of cryostat and its applications in diagnosis.
9. Write a note on air-dried vs wet-fixed smears.
10. How do you prevent folds and wrinkles during section flotation?

\*\*\*\*\*