INSTITUTE OF MEDICAL LABORATORY TECHNOLOGY
SYLLABUS FOR THE FINAL EXAMINATION IN
HISTOPATHOLOGY
(Operative from 1st January, 1969)

The syllabus is issued for general guidance and the examination will not necessarily be confined to it.

Human Biology
A basic knowledge of the anatomy, histology and function of normal tissues.

Fixation
Purpose and effect of fixation. Composition and uses of fixatives and their respective actions on tissue components. Microscopical appearance of stained tissues after various methods of fixation.

Decalcification
Methods for the removal of calcium salts to permit sectioning.

Processing Techniques
Paraffin wax: schedules and regents for manual and mechanical tissue processing.
Other embedding media: celluloid-paraffin, celluloid and low viscosity nitrocellulose, water soluble and ester waxes, gelatine, agar, synthetic resins. Applications and methods.

Microtomy
Microtomes: manipulation and uses of rocking, rotary, sledge, freezing and cryostat microtomes. The principle of ultra microtomy.
Knives: selection and maintenance of knives for various microtomes; manual and mechanical sharpening.
Section cutting: techniques used with different embedding media; attachment of sections to slides; frozen section techniques; methods for rapid diagnosis; methods for hard tissues including undecalcified bone.

Microscopy
The theory and practice of microscopy and microscropy. Care and manipulation of monocular and binocular microscopes and their component parts. Principles and techniques of dark ground, fluorescence, phase-contrast and polarising microscopy and photomicrography.
Principles of electron microscopy.

Staining, Impregnation and Histochemical Methods
Theory and applications of staining, metallic impregnation and histochemical methods. Properties of natural and synthetic dyes.
Composition, preparation and storage of staining reagents. Composition, properties and application of mounting and rinsing media.

Testing of dyes and reagents.
Methods to demonstrate:
Connective tissues, bone and cartilage.
Muscle.
Extracellular products, e.g., amyloid and fibrin.
Parasites, fungi, bacteria and virus inclusions.

Fine structure endogenous, exogenous and artifacts.
Cytoskeletal structures, e.g., secretory granules, Golgi bodies.
Cells and fibres of the central and peripheral nervous systems.
Lipids: polysaccharides, nucleic acids.


Exsiccative Cytology
The recognition of normal and abnormal cells found in exsiccated material, e.g., cervical scrapings, serous fluids and urine. The fixation and preparation of such material for microscopical examination.

Special Methods
The principles of freeze drying, autoradiography, tissue culture, chromosomal preparations and microinjection.

Museum Methods
Preparation of material for museum purposes and photography. Presentation of museum specimens. Staining of gross specimens to demonstrate iron, calcium, fat and amyloid. Maceration and injection methods.

Laboratory Management
Reception, recording, storage, filing and indexing of specimens, blocks and sections. Methods of recording experiments.
Laboratory hazards. Storage, handling and disposal of infected, radion-active and dangerous materials. Laboratory hazards, safety measures and emergency treatment for accidents. Management of laboratory animals. Application of the cruelty to animals Act (1916) and amendments to it.

RECOMMENDED BOOKS
(CURRENT EDITIONS)

Title
Anatomy and Physiology for Nurses
Carleton's Histological Technique
Handbook of Practical Histopathological Technique
Diagnostic Cytology
Human Histology

Author
Evelyn Payne
Drury & Wallington
Culling
Koest & Darfe
Cruckshanks, Dodds & Gardiner

Price (May 1968)
£6.12 0
£6.00 0
£6.00 0
New edition in preparation
£4.00 0

Publisher
McGraw Hill
Faber
Oxford University Press
Butterworth
Pitman Medical
Livingstone

REFERENCE BOOKS
Histopathologic Technique and Practical Histochemistry
Principles of Biological Microtechnique
Laboratory Technique
Histochernistry, Theoretical and Applied
Histochemical Technique
Biological Stains
Histology

Author
Lillie
Baker
Emmet & Cowdry
Pearse
Bruce Casselman
Conn
Ham & Leeson

Price (May 1968)
£6.12 0
£6.00 0
£6.00 0
New edition in preparation
£4.18 0
£4.00 0
£4.00 0

Publisher
McGraw Hill
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Livingstone
Churchill
Livingstone
Pitman Medical

1
INSTITUTE OF MEDICAL LABORATORY TECHNOLOGY

FINAL EXAMINATIONS, 1967—WRITTEN SECTION

HISTOPATHOLOGY

MORNING SESSION—60 MARKS

(Time allowed: 2 hours)

Each question carries 20 marks: 3 only to be attempted

1. Write an essay on haematoxylin and its application in histopathological technique.

2. Compare the P.A.S. reaction with the Feulgen reaction. Mention the substances demonstrated by each.

3. Discuss the use, advantages and disadvantages of automatic tissue-processing machines. Draw up a schedule for use with such a machine, for the overnight processing of fresh biopsy material. Discuss the advantages and disadvantages of the reagents you choose.

4. Discuss the applications, advantages and disadvantages of the various embedding media used in histopathological technique.

Instructions to Candidates

1. Write your number and PRINT your name on the cover of your examination book.

2. Answer THREE questions.

3. BEGIN EACH ANSWER ON A FRESH PAGE. Do not write out the question but use the question number.

4. Use the ruled pages for the answers and the unruled pages for rough work, which should be crossed out.

5. Introduce diagrams wherever appropriate.

6. Obtain additional answer books from the invigilator if necessary.
INSTITUTE OF MEDICAL LABORATORY TECHNOLOGY

FINAL EXAMINATIONS, 1967—WRITTEN SECTION

HISTOPATHOLOGY

AFTERNOON SESSION—40 MARKS
(Time allowed: 2 hours)

All 5 sections to be attempted

A. (Maximum mark 8)
Write brief notes on the fixation and staining of 4 of the following:
1. Nissl bodies
2. microglia
3. mitochondria
4. DOPA-oxidase
5. mast cells,

B. (Maximum mark 8)
Answer 4 of the following:
1. Describe briefly the application of Peltier effect.
2. When is it advisable to embed tissues for frozen sectioning and how is this done?
3. What do you understand by ice-crystal artefacts?
4. How is tissue dehydrated in the freeze-drying techniques?
5. What are the constituents of the more common aqueous mounting media?
6. How would you prepare cryostat sections of minute tissue specimens?

C. (Maximum mark 8)
Name the fixative, type of section and staining method you would use to demonstrate each of 8 of the following:
1. basement membranes in kidney
2. bone canaliculi
3. cholinesterase in skeletal muscle
4. fibrous astrocytes in cerebral cortex
5. fibrin in arterial wall
6. Paneth cell granules
7. urates in gouty tophi
8. myelin
9. sex chromatin in skin
10. motor end plates in skeletal muscle.

D. (Maximum mark 8)
Give the normal site of 8 of the following:
1. Kupffer cells
2. enterochromaffin cells
3. substantia nigra
4. osteoclasts
5. eleidin
6. juxta-glomerular cells
7. Purkinje cells
8. corpus luteum
9. lysosomes
10. cement lines.

E. (Maximum mark 8)
State the substance or tissue you associate with 8 of the following names:
1. Best
2. Schultz
3. Perl's
4. Loyez
5. Cajal
6. Gomori
7. Sheridan
8. Fite
9. Bodian

Instructions to Candidates
1. Write your number and PRINT your name on the cover of your examination book.
2. Answer ALL FIVE sections.
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INSTITUTE OF MEDICAL LABORATORY TECHNOLOGY

FINAL EXAMINATIONS, 1967—WRITTEN SECTION

HISTOPATHOLOGY

MORNING SESSION—60 MARKS

(Time allowed: 2 hours)

Each question carries 20 marks; 3 only to be attempted

1. Write an essay on haematoxylin and its application in histopathological technique.

2. Compare the P.A.S. reaction with the Feulgen reaction. Mention the substances demonstrated by each.

3. Discuss the use, advantages and disadvantages of automatic tissue-processing machines. Draw up a schedule for use with such a machine, for the overnight processing of fresh biopsy material. Discuss the advantages and disadvantages of the reagents you choose.

4. Discuss the applications, advantages and disadvantages of the various embedding media used in histopathological technique.

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INSTITUTE OF MEDICAL LABORATORY TECHNOLOGY

FINAL EXAMINATIONS, 1967 – WRITTEN SECTION

HISTOPATHOLOGY

AFTERNOON SESSION — 40 MARKS
(Time allowed: 2 hours)

All 5 sections to be attempted

A. (Maximum mark 8)
Write brief notes on the fixation and staining of 4 of the following:
1. Nissl bodies
2. microglia
3. mitochondria

B. (Maximum mark 8)
Answer 4 of the following:
1. Describe briefly the application of Perls’ method.
2. When is it advisable to embed tissues for frozen sectioning and how is this done?
3. What do you understand by ice-cryostat sections?
4. How is tissue dehydrated in the freeze-drying techniques?
5. What are the constituents of the more common aqueous mounting media?
6. How would you prepare cryostat sections of minute tissue specimens?

C. (Maximum mark 8)
Name the fixative, type of section and staining method you would use to demonstrate each of 8 of the following:
1. basement membranes in kidney
2. bone canaliculi
3. cholinesterase in skeletal muscle
4. fibrous astrocytes in cerebral cortex
5. fibrin in arterial wall
6. Paneth cell granules
7. urates in gouty tophi
8. myelin
9. sex chromatin in skin
10. motor end plates in skeletal muscle.

D. (Maximum mark 8)
Give the normal site of 8 of the following:
1. Kupffer cells
2. enterochromaffin cells
3. substantia nigra
4. osteodasts
5. olisthion
6. juxta-glomerular cells
7. Purkinje cells
8. corpus luteum
9. lysosomes
10. cement lines.

E. (Maximum mark 8)
State the substance or tissue you associate with 8 of the following names:
1. Best
2. Schultz
3. Perls
4. Loyez
5. Cajal
6. Gomori
7. Sheridan
8. Fite
9. Bodian

Instructions to Candidates
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INSTITUTE OF MEDICAL LABORATORY TECHNOLOGY

FINAL EXAMINATIONS, 1968—WRITTEN SECTION

HISTOPATHOLOGY

MORNING SESSION—60 MARKS

(Time allowed: 2 hours)

Each question carries 20 marks: 3 only to be attempted

1. Discuss the principles of fluorescence microscopy, the apparatus required and suitable light sources. Discuss its application in histopathology.

2. Describe the histological differences between the following fibres. Outline methods by which they may be differentiated:
   - (a) collagen fibres
   - (b) elastic fibres
   - (c) reticulin fibres.

3. List the chemicals commonly used in fixative solutions. What effects do they have on the various tissue components?

4. Compare and contrast methods for the decalcification of tissues.

Instructions to Candidates

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INSTITUTE OF MEDICAL LABORATORY TECHNOLOGY

FINAL EXAMINATIONS, 1968—WRITTEN SECTION

HISTOPATHOLOGY

AFTERNOON SESSION—40 MARKS

(Time allowed: 2 hours)

All 5 sections to be attempted

A. (Maximum mark 8)
   State a use for each of eight of the following in microscopy:
   1. colchicine
   2. alpha naphthylphosphate
   3. resorcinol
   4. citric acid
   5. dibutyl phthalate
   6. pyrogallol
   7. pyridine
   8. 2-ethoxyethanol
   9. benzoyl peroxide
   10. methyl benzoate.

B. (Maximum mark 8)
   Give the underlying principle of four of the following:
   1. Perl's method for haemosiderin
   2. Feulgen reaction for DNA
   3. staining of lipid with Sudan dyes
   4. staining of mast cell granules with toluidine blue
   5. von Kossa's method for calcium salts.

C. (Maximum mark 8)
   State briefly the situation and function of each of eight of the following:
   1. goblet cells
   2. osteoblasts
   3. beta cells of pancreas
   4. parietal cells
   5. oligated cells
   6. oligodendroglia
   7. rods and cones
   8. Vater-Pacini corpuscles
   9. zymogen granules
   10. lysosomes.

D. (Maximum mark 8)
   Where in a microscope system would you find eight of the following?
   1. collecting lens
   2. neutral density filter
   3. analyser (in a binocular microscope)
   4. phase plate
   5. funnel stop
   6. field diaphragm
   7. correction collar
   8. focusing telescope
   9. focusing photo-tube
   10. a prism.

E. (Maximum mark 8)
   In eight of the following, state briefly why
   1. celloidin may be preferred to paraffin wax embedding
   2. a stained section may differ in size and shape from that of the original tissue
   3. formalin is used as a fixative for museum specimens
   4. a trichrome stain may be preferred to van Gieson
   5. Verhoeff's elastic stain does not keep
   6. Ehrlich's haematoxylin should not be used to counterstain the P.A.S. reaction
   7. DPX is not suitable for mounting celloidin sections
   8. the fixation of spleen may be unsatisfactory
   9. tissue fixed in alcohol should be washed before sectioning by the freezing method
   10. sodium iodate is used in the Busch method.

Instructions to Candidates

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INSTITUTE OF MEDICAL LABORATORY TECHNOLOGY

FINAL EXAMINATIONS, 1969—WRITTEN SECTION

HISTOPATHOLOGY

MORNING SESSION—60 MARKS

(Time allowed: 2 hours)

Each question carries 20 marks: 3 only to be attempted

1. Discuss the advantages and disadvantages of methods for the demonstration of amyloid.

2. Discuss the general principles governing the preservation, processing and sectioning of tissues for the subsequent demonstration of enzymes.

3. Discuss the basic techniques for the preparation of materials for either (a) electron microscopy or (b) exfoliative cytology.

4. Discuss methods to demonstrate in sections:
   (a) fungi and (b) mycobacteria, stressing the most important features of these methods and stating any special difficulties that may be met.

Instructions to Candidates

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2. Answer THREE questions.

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INSTITUTE OF MEDICAL LABORATORY TECHNOLOGY

FINAL EXAMINATIONS, 1969—WRITTEN SECTION

HISTOPATHOLOGY

AFTERNOON SESSION—40 MARKS

(Time allowed—2 hours)

All 5 sections to be attempted

A. (Maximum mark 8)
Name the normal situation and a selective method for the demonstration of each of 8 of the following:

1. Nervous substance
2. melanoblasts
3. Paneth cells
4. motor end-plates
5. nuclei
6. zymogen granules
7. chromaffin cells
8. mast cells
9. Russell bodies
10. mitochondria.

B. (Maximum mark 8)
Distinguish between the following pairs (4 to be attempted):

1. achromatic objective and apochromatic objective
2. Huygenian eyepiece and compensating eyepiece
3. Abbé condenser and dark ground condenser
4. barrier filter and neutral density filter
5. chromatic aberration and spherical aberration.

C. (Maximum mark 8)
State in a few words the basic principle of each of four of the following techniques:

1. Marchi’s technique
2. Schmorl’s ferrie-ferriyanide technique
3. autoradiography
4. von Kossa’s technique
5. freeze substitution.

D. (Maximum mark 8)
Define in a few words each of four of the following:

1. metachromasia
2. a leuco dye
3. secondary fixation
4. dichromatism
5. a neutral stain.

E. (Maximum mark 8)
In eight of the following, state briefly why:

1. Orth’s fluid is used as a fixative for a phaeochromocytoma
2. celloidin is recommended as an embedding medium in the Weigert-Pal technique
3. osmium tetroxide is used as a fixative in electron microscopy
4. periodic acid is used in the PAS reaction
5. phosphotungstic acid is used in trichrome stains
6. thymol or camphor is commonly added to raiseum mounting fluids
7. chloroform may be preferred to xylene as a clearing agent
8. EDTA may be preferred to nitric acid for decalcification
9. haematein may be preferred to haematoxylin in the preparation of stains
10. tartrazine is used in celloidin solution.

Instructions to Candidates

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INSTITUTE OF MEDICAL LABORATORY TECHNOLOGY

FINAL EXAMINATIONS, 1970—WRITTEN SECTION

HISTOPATHOLOGY

MORNING SESSION—60 MARKS

(Time allowed: 2 hours)

Each question carries 20 marks: 3 only to be attempted

1. Describe fully the steps you would take in order to distinguish lipofuscin, melanin and haemosiderin in tissue sections.

2. Write an essay on the use of silver nitrate in histopathology technique.

3. Discuss the procedures for concentration of cells for diagnostic exfoliative cytology.

4. Write an essay on the preparation of EITHER (a) frozen sections OR (b) sections of whole organs.

Instructions to Candidates

1. Write your number and PRINT your name on the cover of your examination book.

2. Answer THREE questions.

3. BEGIN EACH ANSWER ON A FRESH PAGE. Do not write out the question but use the question number.

4. Use the ruled pages for the answers and the unruled pages for rough work, which should be crossed out.

5. Introduce diagrams wherever appropriate.

6. Obtain additional answer books from the invigilator if necessary.
HISTOPATHOLOGY

AFTERNOON SESSION—40 MARKS
(Time allowed—2 hours)

All 5 sections to be attempted

A. (Maximum mark 8)

Describe briefly the histological structure of two of the following:

1. pituitary gland
2. adrenal gland
3. pancreas.

B. (Maximum mark 8)

Name a method for the demonstration of each of eight of the following and describe the appearance of a positive result:

1. acid phosphatase
2. haemoglobin
3. phospholipid
4. basement membranes
5. neutral mucosubstance
6. Negri bodies
7. copper
8. bilirubin
9. mast cells
10. mitochondria.

C. (Maximum mark 8)

State in a few words the principles of each of four of the following techniques:

1. Levaditi’s method
2. DOPA-oxidase reaction
3. freeze drying technique
4. diazo method for enterochromaflin granules
5. methylation and saponification of mucosubstances.

D. (Maximum mark 8)

Distinguish between the following pairs, four to be attempted:

1. critical illumination and Köhler illumination
2. high pressure mercury vapour lamp and quartz iodine lamp
3. positive phase contrast and negative phase contrast
4. resolution and definition
5. a Nicof prism and a polaroid disc.

E. (Maximum mark 8)

Answer two of the following:

1. What is the principle and value of the Weigert-Pal technique for the demonstration of myelin?
2. Outline methods for the demonstration of motor end-plates.
3. Outline methods for the demonstration of astrocytes.

Instructions to Candidates

1. Write your number and PRINT your name on the cover of your examination book.
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INSTITUTE OF MEDICAL LABORATORY TECHNOLOGY

FINAL EXAMINATION 1971—WRITTEN SECTION

HISTOPATHOLOGY

MORNING SESSION—60 MARKS
(Time allowed: 2 hours)

Each question carries 20 marks: THREE only to be attempted

1. Discuss fully the principles of the methods for the fixation, preservation and subsequent demonstration of glycogen in tissue sections.

2. Evaluate methods for the demonstration of elastic tissue.

3. Describe the histological structure of the skin and outline methods for the demonstration of its components.

4. Discuss (a) the principles of fluorescence microscopy, and (b) its application to histopathology.

5. A new method for the demonstration of reticulin is published. What features would you regard as (a) essential and (b) desirable in a routine method for the demonstration of reticulin in tissue sections. Discuss the technical difficulties encountered in silver impregnation methods for reticulin.

Instructions to Candidates

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2. Answer THREE questions.

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4. Use the ruled pages for the answers and the unruled pages for rough work, which should be crossed out. (Candidates are encouraged to make notes on the left-hand side of their notebooks. The notes will not be taken into consideration when the books are examined.)

5. Introduce diagrams wherever appropriate.

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INSTITUTE OF MEDICAL LABORATORY TECHNOLOGY

FINAL EXAMINATION 1971—WRITTEN SECTION

HISTOPATHOLOGY

AFTERNOON SESSION—40 MARKS
(Time allowed: 2 hours)
All FOUR sections to be attempted

A. (Five questions to be answered: maximum mark 10)
Outline a special histological method that may be helpful in the diagnosis of each of fire of the following:
1. carcinoid tumour
2. phaeochromocytoma
3. rabies
4. leptospirosis
5. actinomycosis
6. rhabdomyosarcoma
7. multiple sclerosis.

B. (One question to be answered: maximum mark 10)
Answer one of the following:
1. Write an account of the cytological procedures you would employ to evaluate hormonal status in a healthy 30 year old female.
2. Write a brief account of embedding techniques for ultramicrotomy.
3. Write a brief account of the use of tetrazolium salts in enzyme histochemistry.

C. (Five questions to be answered: maximum mark 10)
Write brief notes on each of fire of the following:
1. an amphoteric dye
2. sulphonation of a dye
3. Saldianophilic
4. metachromasia
5. a neutral dye
6. toning.

D. (Five questions to be answered: maximum mark 10)
Define each of fire of the following:
1. hyperplasia
2. metaplasia
3. neoplasia
4. hypertrophy
5. atrophy
6. karyorrhexis
7. necrosis.

Instructions to Candidates

1. Write your number and PRINT your name on the cover of your examination book.
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5. Obtain additional answer books from the invigilator if necessary.
FINAL EXAMINATION 1972—WRITTEN SECTION

HISTOPATHOLOGY

MORNING SESSION—60 MARKS

(Time allowed: 2 hours)

Each question carries 20 marks: THREE only to be attempted

1. Discuss the properties and applications of formaldehyde as a fixative.

2. Outline the hazards to health and safety that may be encountered in histopathology and cytology laboratories. Discuss measures to reduce or eliminate such hazards.

3. Describe what further steps you would take to identify the nature of sudanophil material observed in a tissue section.

4. Write an essay on basic fuchsin and its applications in histopathology.

5. Describe the preparation of material for either (a) electron microscopy, or (b) gynaecological cytology.

Instructions to Candidates

1. Write your number and PRINT your name on the cover of your examination book.

2. Attempt THREE questions only.

3. BEGIN EACH ANSWER ON A FRESH PAGE. Do not write out the question but use the question number.

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5. Introduce diagrams wherever appropriate.

6. Obtain additional answer books from the invigilator if necessary.
A. (One question to be answered: maximum mark 10)

Answer one of the following:

1. Compare and contrast the methods for demonstrating calcium salts in tissue sections.
2. Describe and explain the procedure used to demonstrate acid and alkaline phosphatase by the Gomori methods.
3. Give an account of the histological structure of compact and cancellous bone.
4. Discuss the importance and control of colour temperature in photomicrography.

B. (Five questions to be answered: maximum mark 10)

Write short notes on each of five of the following:

1. gliosis
2. dyskaryosis
3. pyknosis
4. hyperkeratosis
5. silicosis
6. osteoporosis
7. haemochromatosis.

C. (Five questions to be answered: maximum mark 10)

Distinguish between five of the following pairs:

1. argentaffin and argyrophil
2. phase annulus and phase plate
3. auxochrome and chromophore
4. critical illumination and Köhler illumination
5. nanometre and picometre
6. barrier filter and neutral density filter
7. Kultschitsky's haematoxylin and Loyez's haematoxylin.

(Continued)
D. (Five questions to be answered: maximum mark 10)

Write brief notes on five of the following:

1. oligodendroglia
2. argyrophilic plaques
3. Schwann cells
4. neurosecretory substance
5. chrome mordanting of myelin
6. neurones
7. psammoma bodies.

Instructions to Candidates

1. Write your number and PRINT your name on the cover of your examination book.

2. Attempt ALL FOUR sections.

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4. Use the ruled pages for the answers and the unruled pages for rough work, which should be crossed out. (Candidates are encouraged to make notes on the left-hand side of their notebooks. The notes will not be taken into consideration when the books are examined.)

5. Obtain additional answer books from the invigilator if necessary.
Institute of Medical Laboratory Technology
Final Examination 1967 (Cambridge II)
Histopathology Practical
Thursday 13 July 1967
Morning 10 a.m. to 1 p.m.

**Question 1** (40 marks)

Cut sections from the four paraffin wax blocks, A, B, C and D.
Stain one section from each block by haematoxylin and Eosin
and identify the tissue. Stain another section from

Block A by Gram’s method for micro-organisms
Block B by Masson’s trichrome method
Block C by Verhoeff’s elastic method
Block D by Perls’ Prussian blue method

Leave the blocks for inspection.

**Question 2** (12 marks)

Cut frozen sections from the piece of tissue E (in formal saline).
and stain to demonstrate fat by Sudan IV, counterstaining suitably.

**Question 3** (8 mark)

Stain one of the celluloid sections F by Loyez’s method to
demonstrate myelin. The sections are now in 4 per cent Iron
alum having been in this fluid for 24 hours.

**NOTES**

1. All tissues were fixed in Formal saline unless otherwise stated.
2. Label all preparations clearly and leave them in the slide tray.
3. Only brief notes of the methods used are required.
4. All questions must be completed by the end of the morning session.
5. Leave all the blocks on the bench.
Institute of Medical Laboratory Technology

Final Examination 1967 (Cambridge II)

Histopathology Technique

Thursday 13 July 1967

Afternoon, 2.15 p.m. to 4.15 p.m.

Question 4 (10 marks)

Examine the five 'spot' sections G, H, J, K and L and state:

(a) the nature of the tissue
(b) the staining method used.
(c) the substance or tissue component demonstrated
(d) an alternative method

Question 5 (10 marks)

Stain the paraffin section M to demonstrate reticulin fibres. This tissue was fixed in Formal saline.

Question 6 (10 marks).

Frozen sections of skin P are provided. Demonstrate melanin by the Masson-Fontana method. The tissue was fixed in Formal saline.

Question 7 (10 marks)

You are provided with two films; film Q in ethanol and film R unfixed. Stain film Q by Papanicolaou's method and film R by Leishman's method.

NOTES

1. Label all preparations clearly and leave them in the slide tray.
2. Only brief notes of the methods used are required.
INSTITUTE OF MEDICAL LABORATORY TECHNOLOGY

Practical Examination 1973

HISTOPATHOLOGY

King's College, Strand, WC2R 2LS - 10th July 1973
Morning - 3 Hours

Question 1  (28 marks)

Cut sections from the four blocks A, B, C and D. Mount three sections from each block on separate slides. Stain one section from each with haematoxylin and eosin and identify the tissue, briefly giving your reasons. Leave the spare sections for use in the afternoon session. Blocks to be left for inspection.

Question 2  (10 marks)

Two frozen sections are provided which have been in 4% silver nitrate for 24 hours. Complete the Bielschowsky’s method to demonstrate cells and processes. Only one section to be left for inspection.

Tissue - Cerebral Cortex

Question 3  (10 marks)

Stain one of the celloidin sections provided by the Schmorl’s micro-thionin technique.

Tissue - Bone

Question 4  (10 marks)

Examine the five "spot" sections and state:

(a) the nature of the tissue
(b) the substance or tissue components demonstrated
(c) the staining method used.
INSTITUTE OF MEDICAL LABORATORY TECHNOLOGY

Practical Examination 1973
HISTOPATHOLOGY

King's College, Strand, WC2R 2LS - 10th July, 1973

Afternoon - 2 hours

Question 5 (24 marks)

Stain the sections previously cut from Blocks A, B, C and D as follows:

(a) To demonstrate haemosiderin and counterstain
(b) Alcian blue - Chlorantine fast red.
(c) Verhoeff's elastic with van Gieson.
(d) Masson's trichrome

Question 6 (10 marks)

Examine the two papanicolaou stained cervical smears provided and state your findings.

Question 7 (8 marks)

Three formalin fixed frozen sections are provided. Stain one of them with haematoxylin and eosin clear and mount in a resinous medium, in not more than 8 minutes. This is to be started when you are informed by the Examiner. No bonus marks will be gained for sections stained in less than 8 minutes but penalties will be imposed for exceeding that time.

Tissue - Prostate