

EXAMINATION FOR QUALIFIED MEDICAL LABORATORY TECHNICIAN



Subject: Mortuary

Examination Date: Saturday 6 November 2021

Time Allowed: 3 hours – 9.30am – 12.40pm
10 minutes extra time for reading the paper

Candidate Number: «Member_No»

Name: «First_Name» «Surname»

General Instructions

1. Total marks for paper = 100.
2. Marks for each question are as indicated.
3. The paper consists of common syllabus and discipline specific questions.
The relevant breakdown of marks is indicated under each Section Heading.
To pass the QMLT examination, candidates must gain a minimum of a C grade (50%) in the common syllabus examination component and a minimum of a C grade (50%) in the discipline specific component of the written examination.
4. All questions to be attempted.
5. Use of a calculator is permitted.
6. Write all answers into this examination booklet. Extra pages are provided at the back of this examination paper booklet if you require more space to write answers. Ensure you indicate the answer is continued on an additional page and label these additional pages clearly with your candidate number and the number of the question you are answering.

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WORD DEFINITIONS	
Calculate	Perform a mathematical process to get the answer
Classify	Be able to designate to a group
Complete	Finish, have all the necessary parts
Convert	Express in alternative units
Define	State meaning clearly and concisely
Describe	Give a complete account demonstrating a thorough practical knowledge
Differentiate	Briefly and concisely state the main differences
Discuss	Give details, explaining both the positives and negatives
Distinguish	To briefly point out the main differences
Expand	To express at length or in a greater detail
Identify	Recognise according to established criteria
Indicate	Briefly point out
Label	Give a name to
List	Headings only
Match	Find one that closely resembles another
Outline	Write brief notes incorporating the essential facts
Recognise	Be able to identify the main points

SECTION A

Multi Choice Questions - choose one answer for each question

Common Curriculum Questions C.1 - C.12 = 6 marks

Discipline Specific Questions D.13 - D.30 = 9 marks

(0.5 marks per correct answer)

Total Marks = 15 marks

Circle the letter for the correct answer

Example. Which of the below is a primary colour?

- a. Green
- b. Purple
- ☒ c. Red
- d. Orange

C.1 Agreeing to something once provided with all the facts is an example of:

- a. Confidential information
- b. Work place ethics
- c. Informed consent
- d. Human resource management

C.2 Which organisation is responsible for issuing an Annual Practising Certificate?

- a. Medical Sciences Council of New Zealand
- b. New Zealand Institute of Medical Laboratory Science
- c. New Zealand Ministry of Health
- d. New Zealand Qualification Authority

C.3 Harmonisation is:

- a. The process leading to the uniformity of test results from different methods
- b. Where staff are encouraged to work happily together
- c. The process of taking tests out of one laboratory and sending to another to save money
- d. The process of review of laboratory procedure to make things run smoothly

C.4 Alveoli are found in which organ?

- a. Heart
- b. Brain
- c. Lung
- d. Kidney

- C.5 Specimens transported throughout New Zealand must adhere to which industry standard?
- a. IANZ guideline
 - b. NATA guidelines
 - c. CDC guidelines
 - d. IATA guidelines
- C.6 Standard precautions refers to:
- a. Treating all body fluids including blood as potentially infectious
 - b. Wearing gloves at all times when handling patient samples
 - c. Ensuring all staff are aware of all laboratory hazards and have read the Health and Safety manual
 - d. Keeping all samples in appropriate leak proof containers.
- C.7 What is the UN number for labelling packages containing Diagnostic Specimens Category A for air transport?
- a. UN 3373
 - b. UN 1845
 - c. UN 2814
 - d. UN 2900
- C.8 A Class 2 biosafety cabinet offers protection to:
- a. Personnel only
 - b. Personnel and products
 - c. Products only
 - d. Personnel and environment
- C.9 What laboratory department is generally responsible for the diagnosis of diabetes?
- a. Microbiology
 - b. Histology
 - c. Blood Transfusion
 - d. Biochemistry

- C.10 Where on the body is the antecubital fossa?
- a. The leg
 - b. The arm
 - c. The waist
 - d. The neck
- C.11 Why is it important to use personalised logons when using laboratory computer systems?
- a. So management know which staff has achieved their KPIs.
 - b. So all entries in the computer are appropriately tracked in accordance with Total Quality Management
 - c. So HR know when staff are working and they can be paid the correct amount.
 - d. So you don't get the blame for other people's errors
- C.12 Belonging to and achieving appropriate Continuing Professional Development is a legal requirement from which Government Act?
- a. Health Practitioners Competency Assurance Act (2003)
 - b. Health and Disability Commissioner Act (1994)
 - c. Health and Safety at Work Act (2015)
 - d. Employment Relations Act (2000)
- D.13 What information is required, in addition to the 'Authority to uplift specimens' before ante mortem samples can be uplifted from the laboratory on behalf of the coroner?
- a. Correct patient demographics at time of initial presentation
 - b. An email from the pathologist directing you uplift the samples
 - c. The Cor1 direction
 - d. Toxicology requisition form outlining ante mortem samples taken at time of initial presentation
- D.14 A body is received from a transport provider, bagged, and lying face up. What correct anatomical term is used to define the position of the body?
- a. Caudal
 - b. Prone
 - c. Supine
 - d. Neutral

- D.15 What is the only bone in the body not articulated to another bone?
- a. Hyoid
 - b. Ossicles
 - c. Floating rib
 - d. Mandible
- D.16 What portion of the long bone ossifies during periods of growth?
- a. Medullary cavity
 - b. Epiphyseal plate
 - c. Periosteum
 - d. Foramen
- D.17 The spleen is located in what abdominal quadrant?
- a. RLQ
 - b. LUQ
 - c. LLQ
 - d. RUQ
- D.18 Fluid extracted from the eye during post-mortem is called?
- a. Synovial fluid
 - b. Aqueous humour
 - c. Vitreous humour
 - d. Lacrimal fluid
- D.19 Tache noir is a relatively common post-mortem artefact change. What is the main characteristic seen in this change?
- a. Maceration of organs
 - b. Bluish discoloration of skin
 - c. Sclerotic drying of eyes
 - d. Free fluid extruding from nose and mouth
- D.20 Which heart valve is located at the beginning of the ascending Aorta?
- a. Pulmonary Semi Lunar Valve
 - b. Aortic Semi Lunar Valve
 - c. Mitral Bi-Cuspid Atrioventricular Valve
 - d. Tri-Cuspid Atrioventricular Valve

D.21 The post-mortem increase in tissue absorption of the body is otherwise known as?

- a. Imbibition
- b. Algor mortis
- c. Hypostasis
- d. Distribution

D.22 Haemolysis is the rupturing of:

- a. White blood cells into an infected wound
- b. Blood into the pericardial sac surrounding the heart
- c. Red blood cells into surrounding fluid
- d. Cancer cell spread into any body cavity resulting in metastasis

D.23 A deficiency in oxygen reaching the tissues is otherwise known as:

- a. Haemolysis
- b. Cyanosis
- c. Aerobic exhaustion
- d. Anoxia

D.24 The limbic system can be found in what organ?

- a. Heart
- b. Adrenal gland
- c. Brain
- d. Liver

D.25 The percentage weight of gas in formalin is:

- a. 5%
- b. 10%
- c. 37%
- d. 40%

D.26 The islets of Langerhans are cells located within which organ?

- a. The adrenals
- b. The pancreas
- c. The thymus
- d. The pineal gland

D.27 Which of the following is a sphincter muscle?

- a. Masseter
- b. Psoas
- c. Orbicularis oris
- d. Diaphragm

D.28 'Ecchymosis' is a medical term for any form of _____ seen on the body?

- a. Protrusion
- b. Bruising
- c. Swelling
- d. Fluid extravasation

D.29 Cerebrospinal fluid is produced in what area of the brain?

- a. Choroid plexus
- b. Amygdala
- c. Hippocampus
- d. Hypothalamus

D.30 A deceased person or body, when translated to Te Reo:

- a. Wairua
- b. Tangi
- c. Tupapaku
- d. Whanau pani

Section A: Total 15 marks

SECTION B

Labelling of Diagrams, e.g., Anatomy, Hazard Identification, Instrument

Common Curriculum Questions C.31 - C.33 = 5 marks

Discipline Specific Questions D.34 = 5 marks

(Answer all questions)

Total Marks = 10 marks

C.31 Name the following hazard symbols

(0.5 marks per correct answer)

(C.31: 1.5 marks)

a.



b.



c.



a. _____

b. _____

c. _____

C.32 Name the equipment pictured below.

(0.5 marks per correct answer)

(C.32: 1.5 marks)

a.



b.



c.



a. _____

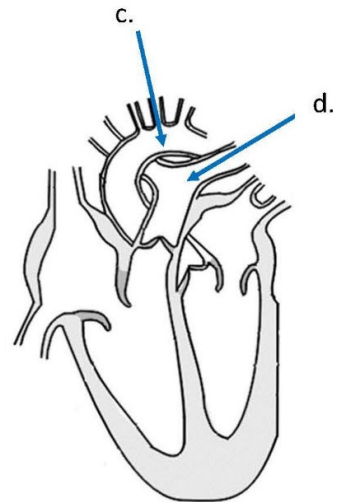
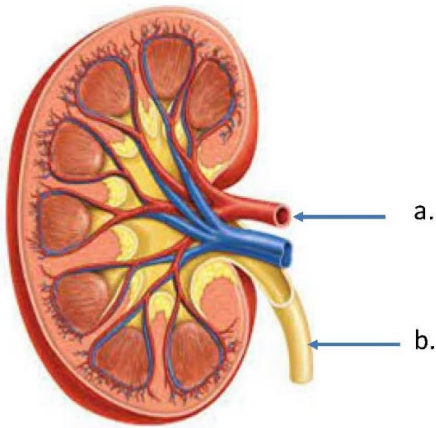
b. _____

c. _____

C.33 Name the organs pictured below.

(0.5 marks per correct answer)

(C.33: 2 marks)



a. _____

c. _____

b. _____

d. _____

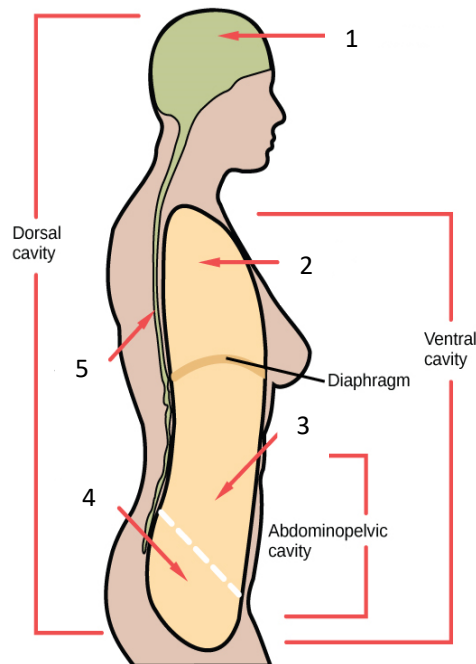
D.34 (i) State each body cavity numbered 1 - 5

(0.5 mark per correct answer)

(ii) State an organ you would expect to find in each

(0.5 mark per correct answer)

(D.34: 5 marks)



1. Cavity _____ Organ _____

2. Cavity _____ Organ _____

3. Cavity _____ Organ _____

4. Cavity _____ Organ _____

5. Cavity _____ Organ _____

Section B: Total 10 marks

SECTION C

Tables, Match Column Definition

Common Curriculum Questions C.35 - C.36 = 4 marks

Discipline Specific Questions D.37 = 6 marks

(Answer all questions)

Total Marks = 10 marks

C.35 Match the definition in column (A) with the correct description in column (B)

Write your answers in the table below. (Roman numeral only required.)

(C.35: 2 marks)

A	B
Accuracy	(i) Nose bleed
Morphology	(ii) Inflammation of the Kidney
Epistaxis	(iii) The science of organic forms and structure
Nephritis	(iv) The ability of a measurement to match the actual value of the quantity being measured

A	B (enter Roman numeral only)
Accuracy	
Morphology	
Epistaxis	
Nephritis	

C.36 Expand the following commonly used laboratory abbreviations. There are both laboratory tests and clinical conditions/details

(0.5 marks per correct answer)

(C.36: 2 marks)

MI _____

UTI _____

PPE _____

PCR _____

D.37 Match the disorders in Column A with their resultant predominantly affected organ in Column B.
Write your answers in the table provided. (Roman numeral only required.)

(0.5 marks per correct answer)

(D.37: 6 marks)

A	B
Macular degeneration	i. Nerves
Ischaemic colitis	ii. Bones
Transient ischaemic attack	iii. Liver
Emphysema	iv. Nose
Cirrhosis	v. Brain
Hydronephrosis	vi. Lungs
Atrial fibrillation	vii. Eyes
Osteoarthritis	viii. Pancreas
Diabetes	ix. Bowel
Post-nasal drip	x. Heart
In-situ malignant melanoma	xi. Kidneys
Amyotrophic lateral sclerosis	xii. Skin

A	B (enter Roman numeral only)
Macular degeneration	
Ischaemic colitis	
Transient ischaemic attack	
Emphysema	
Cirrhosis	
Hydronephrosis	
Atrial fibrillation	
Osteoarthritis	
Diabetes	
Post-nasal drip	
In-situ malignant melanoma	
Amyotrophic lateral sclerosis	

Section C: Total 10 marks

SECTION D

Calculations

Common Curriculum Questions C.38 - C.41 = 5 marks

Discipline Specific Questions D.42 - D.43 = 5 marks

(Answer all questions)

(Use of a calculator is permitted)

Total Marks = 10 marks

- C.38 A patient needs a specimen taken within 36 hours of flying to meet with travel requirements. They fly at 2130 hr on the 10TH of November.

When is the earliest they can have the specimen collected? Give the date and time.

(C.38: 1 mark)

- C.39 A department needs to demonstrate an increase in workload and is asked to calculate the average number of specimens received for the week. **(C.39: 1 mark)**

Day of the week	Monday	Tuesday	Wednesday	Thursday	Friday
Specimens per day	227	243	217	209	186

What is the mean number of samples per day? *(Show calculations)*

- C.40 Convert the following:

(C.40: 2 marks)

0.75 L	to	_____	mL
1/4	to	_____	%
142ug	to	_____	g
185cm	to	_____	mm

(0.5 mark per correct answer)
(C.41: 1 mark)

Express the above result as a percentage.

The formula weight is a quantity computed by multiplying the atomic weight (in atomic mass units) of each element in a chemical formula by the number of atoms of that element present in the formula, then adding all of these products together

Element	Symbol	Atomic Mass	# of Atoms	Mass Percent
Hydrogen	H	1.00794	2	6.714%
Carbon	C	12.0107	1	40.001%
Oxygen	O	15.9994	1	53.285%

D.43 Using the monthly temperature monitoring sheets for the mortuary fridge below, calculate and show your workings for:

(D.43: 3 marks)

- the mode temperature for **Tuesday** (1 mark)
- the median temperature value for **Week 3** (1 mark)
- the average temperature for the **whole month** of mortuary fridge temperature. Round your answer to 2 decimal points. (1 mark)

WEEK	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
1	4.2	4.8	5.1	3.9	4.2	4.1	4.4
2	4.8	4.7	5.2	5.1	4.8	4.9	4.8
3	5.1	5.0	4.7	4.9	4.9	5.0	4.7
4	4.8	4.7	4.6	4.8	5.1	5.3	4.9

Section D: Total 10 marks

SECTION E

Short Answer Questions

Common Curriculum Questions C.44 - C.49 = 10 marks

Discipline Specific Questions D.50 - D.58= 25 marks

(Answer all questions)

Total Marks = 35 marks

C.44 Define Quality Assurance:

(D.44: 1.5 mark)

C.45 Describe the “Duty of Care” in relation to patient samples. *(0.5 marks per point. Max. 2 marks)*

(C.45: 2 marks)

C.46 List 3 routes of infection from biological material.

(0.5 marks per point. Max. 1.5 marks)

(C.46: 1.5 marks)

C.47 Outline the prevention of a sharps injury.

(0.5 marks per point. Max. 2 marks)

(C.47: Total 2 marks)

C.48 Describe Cultural Competence.

(C.48: 3 marks)

D.49 State the organ affected and describe the physiology and changes seen in tache noir.

(D.49: 2 marks)

D.50 Indicate two commonly used adjunctive services that can be utilised in addition to full post-mortem and discuss each service.

(D.50: 3 marks)

- D.51 Upon opening a body, you note the presence of a portion of blackened bowel. Indicate two possible causes for this finding and state two symptoms that the deceased may have experienced prior to their death. **(D.51: 2 marks)**

- D.52 Outline dependent lividity and how this change can guide the pathologist's examination. **(D.52: 2 marks)**

- D.53 Outline three factors that affect the rate of decomposition and how it may occur.
(0.5 marks for identifying the factor and 0.5 marks for outline of how it affects the rate) **(D.53: 3 marks)**

D.54 Distinguish between two different types of post-mortem direction a coroner can authorise.
(D.54: 2 marks)

D.55 Outline four methods of evisceration and differentiate between each technique.
(D.55: 4 marks)

D.56 Indicate what a COR25 and a COR26 document are used for and distinguish between each document. **(D.56: 2 marks)**

D.57 Outline four differences between a routine coronial post-mortem and a forensic CIB post-mortem. **(D.57: 2 marks)**

D.58 List six pieces of PPE used when conducting an autopsy: **(D.58: 3 marks)**

1.

2.

3.

4.

5.

6.

Section E: Total 35 marks

SECTION F

Essay Questions

Discipline Specific Questions D.59 - D.60 = 20 marks

(Answer all questions)

Total Marks = 20 marks

SECTION F

Essay Questions

Discipline Specific Questions D.59 - D.60 = 20 marks

(Answer all questions)

Total Marks = 20 marks

SECTION F

Essay Questions

Discipline Specific Questions D.59 - D.60 = 20 marks

(Answer all questions)

Total Marks = 20 marks

SECTION F

Essay Questions

Discipline Specific Questions D.59 - D.60 = 20 marks

(Answer all questions)

Total Marks = 20 marks

SECTION F

Essay Questions

Discipline Specific Questions D.59 - D.60 = 20 marks

(Answer all questions)

Total Marks = 20 marks

D.59 In essay format, describe the post-mortem findings of a deceased who died as a result of conflagration in a house fire. Include in your answer, how the pathologist determines whether the patient was alive after the fire began and any additional tests that may be relevant.

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(D.59: 10 marks)

[illegible]

[illegible]

D.60 In essay format, describe the process of toxicology collection, testing and retention in your mortuary, using three routinely collected specimens as examples. **(D.60: 10 marks)**

[illegible]

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Section F: Total 20 marks

Candidate No.: _____

Question No:

[illegible]

