



CSMLS

Canadian Society for
Medical Laboratory Science

EXAMINATION HANDBOOK

Applicants for Entry Level Certification Examination:
General Medical Laboratory Technology
Diagnostic Cytology
Clinical Genetics

Tuesday, June 7, 2011
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This handbook contains all the information
and forms you need to apply for our entry
level certification exam.

"The CSMLS revised this document according to plain language principles with funding from the Government of Canada's Foreign Credential Recognition Program."



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TABLE OF CONTENTS

Table of Contents	3		
Code of Professional Conduct	4		
GENERAL INFORMATION	5	ON EXAM DAY	12
Our Purpose	5	Admission to the Exam	12
Council on National Certification	5	Before the Start of the Exam	12
Discrimination Policy	5	Computer Answer Sheet	12
Exam Development and Validation	5	Unforeseen Circumstances	12
Exams	5	At the End of the Exam	12
Exam Security and Confidentiality	6	Access to Exam Papers	12
Eligibility Requirements	6	CSMLS Exam Site Rules	13
Request for Special Accommodation	6	AFTER THE EXAM	14
APPLYING FOR THE EXAM	7	Exam Marking	14
Before Completing the Application	7	Results	14
Non-Resident of Canada	7	Regulatory Bodies	14
Name and Contact Information	7	CSMLS Certificate	14
Name on Certificate	7	Performance Report	14
Newly Certified Members	7	Manual Verification of Results	15
Eligibility Requirements	8	Applying for Rewrite	15
Exam Site	8	Incomplete Certification	15
Language of Exam	8	APPENDIXES	16
Disclosure of Personal Information	8	Guidelines for writing CSMLS Exams	16
Applicant's Statement	8	Sample Questions	18
Submitting Your Application and Fee	8	Computer Answer Sheet	20
Deadline Dates	8	Important Information	24
Exam Fees	9	Request for Exam Cancellation	25
Payment methods	9	Request to Change Exam Site	26
Mailing Information	8	Name Change and/or Address Change	27
AFTER APPLYING	10	The Angoff Method	28
Email Acknowledgement	10	Determining the Pass Mark	29
Confirmation of Exam Registration	10	Provincial Regulatory Bodies	30
Verification of Eligibility	10	Exam Sites	32
Admission to Examination Notice	10	Application for Examination	33
Exam Site Change	10		
Address Change	10		
Legal Name Change	10		
Exam Cancellation	11		
Failure to Take the Exam	11		



CODE OF PROFESSIONAL CONDUCT

- Medical laboratory professionals are dedicated to serving the health care needs of the public. The welfare of the patient and respect for the dignity of the individual shall be paramount at all times.
- Medical laboratory professionals work with other health care professionals, to provide effective patient care.
- Medical laboratory professionals shall promote the image and status of their profession by maintaining high standards in their professional practice and through active support of their professional bodies.
- Medical laboratory professionals shall protect the confidentiality of all patient information.
- Medical laboratory professionals shall take responsibility for their professional acts.
- Medical laboratory professionals shall practise within the scope of their professional competence.
- Medical laboratory professionals shall endeavour to maintain and improve their skills and knowledge and keep current with scientific advances. They will uphold academic integrity in all matters of professional certification and continuing education.
- Medical laboratory professionals shall share their knowledge with colleagues and promote learning.
- Medical laboratory professionals shall be aware of the laws and regulations governing medical laboratory technology and shall apply them in the practise of their profession.
- Medical laboratory professionals shall practise safe work procedures at all times to ensure the safety of patients and co-workers and the protection of the environment.

Revised March 2007 © CSMLS

GENERAL INFORMATION

CAREFULLY READ THE ENTIRE HANDBOOK BEFORE APPLYING FOR EXAMINATION.

OUR PURPOSE - To promote and maintain a nationally accepted standard of medical laboratory technology by which other health professionals and the public are assured of effective laboratory services. We also promote, maintain and protect the professional identity and interests of medical laboratory technologists and of the profession.

In each province where there is a regulatory body, the regulatory body oversees the practice of the profession. We work with provincial regulatory bodies to make sure that CSMLS qualifications can be used across the country. We have developed exam service agreements with some of them so that they use CSMLS certification as an admission requirement.

COUNCIL ON NATIONAL CERTIFICATION - The Council on National Certification (CNC) is responsible for all matters relating to certification standards and policies. It has members from each provincial association and regulatory body. The CNC approves the competency profiles that are used for certification and accreditation of education programs.

DISCRIMINATION POLICY – The CSMLS is an organization that does not discriminate for any reason, including age, gender, race, ethnic origin, colour, religion, sexual orientation or marital status.

EXAM DEVELOPMENT AND VALIDATION - The CNC chooses certified subject matter experts from across Canada to form exam panels. These panels are responsible for the development of exams, exam plans (the blueprint) and new questions. They also validate exams to ensure that they are fair and that they assess the skills they are supposed to. New test items are included in an examination with a zero mark assigned for statistical validation.

EXAMS - The CSMLS exams are competency-based, testing what you can do and how well you can use your knowledge, not just what you know. Competency profiles include exam blueprints, which show the topics that the exam will test and the weighting for each topic. The competency profiles are available on the CSMLS website. www.csmls.org

The questions on the CSMLS exams are in multiple-choice format. Both Diagnostic Cytology and Clinical Genetics exams include questions linked to images. (Clinical Genetics includes both cytogenetic and molecular genetic images for analysis.)

The exams are divided into two parts, with a total time of 5.5 hours. They take place from 0900 to 1530h, with a one-hour break for lunch between Part A and Part B.

Part A:	0900 - 1200h
Break:	1200 - 1300h
Part B:	1300 - 1530h

EXAM SECURITY AND CONFIDENTIALITY - All CSMLS exams are confidential between you and the CSMLS — both **before** and **after** administration. Exam invigilators must also protect confidentiality and security.

Breaches of exam security include cheating, copying, disclosing, publishing, reproducing or transmitting the exam in whole or in part. **This is not tolerated** in any form or by any means, whether verbal, written, electronic or mechanical, for any reason.

If you know of **any breach of exam security**, you must report it to the exam invigilator and/or the CSMLS Director of Certification immediately. Any attempt to breach exam confidentiality by sharing details of the exam with others is professional misconduct, and be dealt with accordingly.

You must sign the CSMLS Exam Security Agreement before the start of the exam and return it with your exam materials. If we do not receive your signed Exam Security Agreement, **your exam will not be marked**.

ELIGIBILITY REQUIREMENTS - There are two ways to become eligible to write the CSMLS Certification Exam.

Option A
Successfully complete a CMA-accredited* MLT education program. You must complete all diploma requirements before the exam date.

Option B
Be declared eligible through the CSMLS Prior Learning Assessment. You must be declared “Equivalent” to the competency profile and meet our language requirement.

**A CMA-accredited program is one that has met the requirements of the Canadian Medical Association Committee on Program Accreditation. Visit the CSMLS website for a list of programs.*

REQUEST FOR SPECIAL ACCOMMODATION (disability, religious) - If you are a candidate with a request for special accommodation, you must contact us in writing before the exam application deadline for the request to be considered. You must include relevant and current documentation (medical or religious) to support your request.

APPLYING FOR THE EXAM AND FILLING OUT THE APPLICATION

BEFORE COMPLETING THE APPLICATION - Read this handbook completely before you fill out the application form. The exam application is located on the inside back cover of this handbook. Keep this handbook for future reference.

- Apply online www.csmls.org (for first time applicants only) or,
- Send your application by fax, email or mail

We will begin accepting applications one month before the application deadline date.

NON-RESIDENT OF CANADA - If you are a non-resident of Canada and we have declared you eligible for the CSMLS Certification Exam, you will need to submit the following documents when you apply to write the exam:

- Non-resident exam application
- Non-resident exam fee
- Copies of valid travel documents (for example, travel itinerary)
- Copy of travel visa, if applicable

You will not be allowed to write the exam if you include false information on your application or submit forged documents.

NAME AND CONTACT INFORMATION - Clearly print your name as you want it to appear on all correspondence. Complete the required address and contact information. Please include your email address.

Correspondence about your exam, including your exam results, will be sent to the address written on your exam application. If you move, send us your new address using the Name and/or Address Change Form. The form can be found online at www.csmls.org

You will be required to pay a service fee for duplicate copies, the cost of which is \$25.00.

NAME ON CERTIFICATE - Please print your full name, including accents, as you wish it to appear on your CSMLS certificate.

NEWLY CERTIFIED MEMBERS - We publish a list of new certified members every year. If you want your name included on this list, please check the statement box on the application. We only publish your name if you are a member in good standing at the time of publication.

ELIGIBILITY REQUIREMENTS - Select your eligibility route to write the CSMLS Certification exam.

Choose either:

- Option A – Graduate from a CMA accredited training program
- Option B – CSMLS - Prior Learning Assessment (PLA)

EXAM SITE - Select your exam location from the list provided in this handbook and write the city and site code on your application. Space is limited at some exam sites, so you may not be assigned to the site you choose.

- We reserve the right to cancel an exam site if there are fewer than five (5) candidates
- We reserve the right to assign you to your exam site
- We reserve the right to monitor exam sites

LANGUAGE OF EXAM – We offer the exam in both English and French, please select your language of preference. Your exam will be in the language you have indicated on your application.

COLLECTION, USE AND DISCLOSURE OF PERSONAL INFORMATION - You must complete this section of the exam application. Carefully read the “Important Information about the Collection, Use and Disclosure of Your Personal Information”.

APPLICANT’S STATEMENT - You must read and complete this section of the exam application.

SUBMITTING THE APPLICATION AND FEE – You must include the following with your application:

- a completed form
- full payment (Canadian cheque, Canadian money order, MasterCard, Visa and American Express)

DEADLINE DATES – If you are applying to rewrite the exam, we will give you an alternate deadline date when we send your exam results.

Exam Session	Exam Registration Opens	Exam Application Deadline	LATE Exam Application Deadline
June	February 1	March 1	April 1
October	June 1	July 1	August 1
February	October 1	November 1	December 1

If your application is postmarked after the deadline date, we will charge you a non-refundable late fee of \$100 (Cdn).

EXAM FEES – Be sure to submit the appropriate exam fee:

Exam Type:	Member	Non-member	Non-resident
General MLT	\$499 (Cdn)	\$725 (Cdn)	\$1350 (Cdn)
Clinical Genetics	\$600 (Cdn)	\$900 (Cdn)	\$1800 (Cdn)
Diagnostic Cytology	\$600 (Cdn)	\$900 (Cdn)	\$1800 (Cdn)

We reserve the right to change fees without notice.

PAYMENT METHODS - Your full exam fee must be submitted with your exam application. You can pay by **Canadian cheque, Canadian money order, Visa, MasterCard or American Express**. Any other form of payment will be rejected and the application/fee returned to you.

Make your cheque or money order payable to the Canadian Society for Medical Laboratory Science or CSMLS. If your payment is returned for insufficient funds, you will be charged a \$25.00 NSF fee. You will **not** be able to challenge the exam until payment is received.

Complete the credit card portion of the application form for payment by Visa, MasterCard or American Express.

MAILING INFORMATION - We are not responsible for lost or misdirected mail. We recommend that your application is sent by courier service, so you can track it.

Mailing Address
PO Box 2830, LCD 1 Hamilton, ON L8N 3N8

Courier Address
33 Wellington St N Hamilton, ON L8R 1M7

Applications must be filled out completely and include the correct exam fee or your application will be returned.

AFTER APPLYING FOR EXAMINATION

ACKNOWLEDGING YOUR APPLICATION – When your application arrives in our office, an email acknowledgement will be sent to the address you indicated on your application.

CONFIRMATION OF EXAM REGISTRATION - A confirmation of exam registration will be sent to you by mail when we have processed your application and fee. Processing may take 4-6 weeks.

VERIFICATION OF ELIGIBILITY - The eligibility of ALL exam applicants is verified.

Option A Graduates of CMA-accredited programs	Option B PLA clients
We will contact your educational institution on your behalf to verify that you have completed the program requirements. We must receive verification from your program at least seven days before you write the exam.	PLA clients must have a valid Eligibility Statement from CSMLS to write the exam.

~ If you do not meet eligibility requirements, we will cancel your exam application. ~

as per CSMLS refund policy

ADMISSION TO EXAMINATION NOTICE - Approximately two (2) weeks before the exam date, we will mail you two copies of your Admission to Examination notification. The notice will provide you with exact exam location details. You must bring both notifications to the exam site along with your photo identification.

EXAM SITE CHANGE - If you need to change your exam site, let us know immediately by sending the Request to Change Exam Site form. We will do everything we can to change your site as long as we receive the form at least 30 days before the exam date.

ADDRESS CHANGE - If you change your address, you must let us know by completing and sending the Name and/or Address Change form. The form can be found online at www.csmls.org

Unless you send this form, we will send all correspondence about your exam, including your exam results, to the address written on your exam application. You will be required to pay a service fee for duplicate copies.

LEGAL NAME CHANGE - If you change your name, you must let us know by completing and sending the Name and/or Address Change Form. You must also send proof of your name change with the form.

EXAM CANCELLATION - If you cannot take the exam and want to cancel your application, complete and submit the Request for Exam Cancellation form.

If you cancel at least 30 days before the exam, you will receive a partial refund.

- There is a \$100 non-refundable processing fee
- We do not refund late fees and non-member surcharges
- If you cancel your exam less than 30 days before the exam you will not receive a refund

Cancellation of your exam may result in a lost attempt.

FAILURE TO TAKE THE EXAM - If you do not show up for your exam without prior explanation, you will have given up a chance to write the exam. We will not refund your fee or give you a credit.

ON EXAM DAY

ADMISSION TO THE EXAM - You must bring your **Admission to Examination Notification** and **photo identification** to the exam site. To be allowed into the exam, you must present the admission notice **and** your photo ID to the exam invigilator.

BEFORE THE START OF THE EXAM - The invigilator will have a list of exam candidates. You must sign the list when you receive each part of the exam. The invigilator will read the exam instructions aloud before the start of each part.

NEIGHBOURS - Do not worry about the people seated near you. People react in many different ways to exams. Some people are confident while others are nervous; some people finish very quickly. Do not use other people's behaviour as a measure of how hard the exam is and do not let others disturb or affect your exam strategy.

COMPUTER ANSWER SHEET - The computer answer sheets are electronically marked. You must fill in the answer sheets correctly using the pencil given to you.

A sample answer sheet is in this handbook. This sample shows the correct way to fill out the CSMLS identification number and name. Do **not** complete the birth date, sex, grade or education sections.

UNFORESEEN CIRCUMSTANCES - If an exam is disrupted through circumstances beyond the control of the exam site and the CSMLS (such as power failure or extreme weather), the invigilator or the person responsible for the site can adjust the timing of the exam.

If you cannot reach the exam site because of circumstances beyond your control, you must contact the CSMLS before the exam begins.

AT THE END OF THE EXAM - When you finish the exam, you **must** put the following materials in the return envelope:

- Signed Exam Security Agreement
- Computer Answer Sheet
- Test Book
- Question Comment Sheet
- Rough Notes
- Outer Envelope
- Admission to Examination Notice

Seal the envelope and put your ID# and signature on it. Hand the sealed envelope to the invigilator. Leave the exam room with only the CSMLS pencil and calculator.

ACCESS TO EXAM PAPERS - You will not have access to your exam materials after you have handed them to the invigilator.

CSMLS EXAM SITE RULES

- Bring your photo ID and Admission to Exam Notice with you to the exam. You will not be allowed entry to the exam without them.
- You must not bring pens, pencils, pencil cases, food, beverages (including water), notes, textbooks, cell phones, personal digital assistants (PDA's), pagers and earplugs into the exam area. You will not be allowed to wear a hat. All items including purses and backpacks must be left at the front of the room. The CSMLS is not responsible for your personal items.
- You must sign the CSMLS Exam Security Agreement and return it with your exam materials. **We will not mark your exam if you do not sign this agreement.** It is recommended that you sign the Exam Security Agreement before beginning the exam.
- Once the exam begins, talking is not permitted.
- The content of the examination is confidential between you and the CSMLS and is not to be discussed or shared with anyone, including the exam invigilator.
- If you are found using notes or reference material of any kind, you will be sent out of the exam immediately and your exam papers will not be marked.
- Each individual exam package is sealed with a CSMLS security tape and is to be opened only by you.
- We will give you a calculator and a pencil for filling in the identification numbers and answers on the computer answer sheet.
- The invigilator will constantly supervise each exam session and you may be subject to video surveillance.
- If you arrive late, you will not be given extra time to finish the exam.
- Please use the washroom before beginning the exam. You will not be allowed to leave and re-enter during the exam.
- Candidates should use back pages of the test book for rough notes and calculations. Loose paper is not provided.
- You must stop writing immediately when the invigilator says time is up. We will not mark your exam if you do not stop writing when instructed.
- When you finish the exam, you must put the following materials in the return envelope (double check that everything is in the envelope before you seal it):
 - Signed Exam Security Agreement
 - Computer Answer Sheet
 - Test Book
 - Comment Sheet and Rough Notes
 - Outer Envelope
 - Admission to Examination Notice
- You will not be allowed access to your exam materials once you have handed them in.

AFTER THE EXAM

EXAM MARKING - The computer answer sheets are electronically marked. We create quality control reports during and after marking to ensure accuracy.

RESULTS – Results will be sent in the mail **within 45 days** of the exam date. We will send your statement of results to you at the address provided on your application form, unless you send a Name and/or Address Change form. If you do not receive your result within 60 days of the exam, let the CSMLS office know by sending us a letter, fax or email. Our contact information is on the inside front cover of this handbook. You will be required to pay a service fee for duplicate copies.

Under no circumstances will we give or discuss exam results over the phone.

We report your exam result as “pass” or “fail.” You will not receive a percentage or numerical mark. We set the pass mark for each exam using the Angoff method; therefore, the passing criteria is different for each exam.

REGULATORY BODIES - In provinces where we have an exam services agreement with a regulatory body, we will provide the regulatory body with a list of candidates from the province. The list shows each candidate's pass or fail result. We will not give a candidate's exam result to any other individual or organization without written consent from the candidate.

If you pass the exam and want to work in a regulated jurisdiction, contact the regulatory body in that province for their registration requirements.

CSMLS CERTIFICATE – **We will send your certificate when we process your Application for Membership and Certificate.** If you pass the exam, you will receive a Statement of Examination Results and an invitation to become a certified member of the CSMLS. We provide certificates to members in good standing.

Holding a certificate is a privilege of membership. You must return your certificate to the CSMLS if you do not renew your membership.

PERFORMANCE REPORT (BAR CHART) - If you do not pass the exam, you will receive a performance report (bar chart) that shows how you did in each of the categories defined in the exam blueprint. This report may help you prepare to write the exam again. If you pass the exam, you will **not** receive a performance report.

If you are a graduate from a CMA Program and you did not pass the exam, we encourage you to contact your educational institution as they may be able to assist you in preparing for your next exam attempt.

MANUAL VERIFICATION OF RESULTS – Before we release exam results, we perform many quality control and assurance checks to be sure your results are accurate. An error in your result is unlikely.

If you fail the exam, you can ask to have your result checked (manual verification).

We must receive your request in writing; be sure to include a payment of \$100 (Cdn). All requests must be received in our office no later than 60 days after the exam date.

If you have submitted a request for manual verification of your result, do not wait for us to complete your request before submitting your application to re-write the exam.

APPLYING FOR REWRITE - If you fail the exam and are eligible to write it again, we will automatically send you an application form and an alternate deadline date. You are expected to come to the next available exam session.

INCOMPLETE CERTIFICATION (TIME LIMIT) - You cannot write the exam more than three (3) **consecutive** (one after another) times within **12 months** of initial eligibility.

If you do not pass the exam within 12 months, you will no longer be eligible to write the exam. If you want to challenge the exam again, you will need to re-establish your exam eligibility.

You will be required to submit copies of your Performance Report (bar charts) to the CSMLS. We will review your barcharts to identify your consistent areas of weakness.

Once your areas of weakness have been identified, you will be required to successfully complete an approved learning plan.

If you sign up for an exam but then cancel, it will still be considered an eligible attempt.

*Initial eligibility: **Option A** – *first session available after finishing CMA-accredited program*
 Option B – *exam sessions listed on the Eligibility Statement*

The Council on National Certification (CNC) has a policy about the number of times any candidate can re-establish eligibility to write the certification exam. Candidates who exceed two exam cycles (6 eligible attempts) must complete a full CMA-accredited education program before writing the exam again.

APPENDIXES

GUIDELINES FOR WRITING CSMLS EXAMS

BEFORE THE EXAM

Have a specific plan in mind **before** you start to write the exam, and stick to it.

STUDY

Use the **Competency Profile** for your discipline, as a guide when you study. The Competency Profile for each discipline is located on our website.

The CSMLS exams are competency-based, testing what you can do and on how well you use your knowledge, not just what you know.

The Competency Profiles include the exam blueprint. The blueprint is a guideline that shows the exam weighting for each category (how much each category is worth).

The CSMLS does not provide a 'study guide' for any of our exams. You can download the Competency Profile and Personal Competency Rating booklets from our web site. www.csmls.org

There is a text book reference list for each discipline also available on our website.

AT THE EXAM

Stay calm!

Bring these items:

- a sweater or jacket in case the room temperature is not comfortable for you
- a watch to keep track of time
- both copies of your Admission to Exam Notification letter
- your photo ID

Before the exam starts, the invigilator will give you a sealed exam package. It contains all your exam material, including a pencil and calculator. The content of the examination is confidential between you and the CSMLS and is **not** to be discussed or shared with anyone, including the exam invigilator.

You may make notes in the exam book.

SET A TIME LIMIT

First, write your name and your CSMLS ID number clearly on the computer answer sheet provided and on the exam book. You do not need to fill in your birth date, sex, grade or education. **Do not leave this step until the end.**

Look at the whole exam before you start. Carefully read the instructions that come before each section of questions. Check the number of questions that you have to answer (this number is printed on the front of the exam). Divide the number of questions by the total number of minutes in the exam. This will give you the total amount of time you have **for each question.**

Read each **question** carefully and make sure that you understand the question before you answer it.

Read each **choice** completely. Choose the best option. If you feel that one answer is more correct than the others are, fill it in on the computer answer sheet and move on to the next question. If you are not sure of the answer, fill in your first choice on the computer answer sheet, flag the question in the exam book by putting a distinctive mark (like a star or an X) beside it, and review the flagged questions at the end of the exam, if you have enough time.

FIRST IMPRESSIONS USUALLY PRODUCE CORRECT ANSWERS

If you do **not** see an obvious first choice, then do **all** of the following things:

1. Underline key words and make sure that you know what they mean.
2. Ignore answers that are obviously wrong.
3. Select the best answer. Flag the questions you are not sure of and return to these questions at the end of the exam.

CHANGING ANSWERS ~ "BEWARE OF THE EVILS OF THE ERASER"

Research indicates that first impressions are usually right. About three out of four changes are from a **correct answer to a wrong one.** Erase with great caution.

SAMPLE QUESTIONS

Instructions:

1. Each of the questions is followed by **four** suggested answers. Select the one that best answers the question.
2. Blacken the appropriate circle on the answer sheet.
3. Only one answer is acceptable for each question.
4. One (1) mark is allotted for each correct answer.

GENERAL

1. Which type of microscopy may be used to identify crystals in a clinical specimen?

- (a) Polarizing
- (b) Darkfield
- (c) Phase contrast
- (d) Fluorescence

2. The ABO group of a new blood specimen from a patient does **NOT** concur with what is previously recorded for the patient. What is the correct action to take?

- (a) Use the current ABO group
- (b) Review previous records to find the error
- (c) Repeat the ABO group using a new lot number of antisera
- (d) Repeat the ABO group on a new specimen from the patient

A patient in the emergency ward has the following lab results:

Blood Gases:

pH - 7.15

pCO₂ - 40 mm Hg

pO₂ - 80 mm Hg

Serum ketones - Positive

Glucose - 31.5 mmol/L

Total CO₂ - 8 mmol/L

3. Which condition are these results consistent with?

- (e) Hepatitis
- (f) Renal failure
- (g) Diabetes mellitus
- (h) Myocardial infarctions

DIAGNOSTIC CYTOLOGY

1. Which cells are diagnostic of human Papillomavirus infection in a Pap smear?
 - (a) Decoy cells
 - (b) Spindle cells
 - (c) Koilocytes
 - (d) Dyskeratocytes
2. What cell indicates a "deep cough" sputum sample?
 - (a) Ciliated columnar cells
 - (b) Squamous metaplastic cells
 - (c) Lymphocytes
 - (d) Alveolar macrophage
2. The smear of a 21-year-old woman showed a relatively clean basophilic mucoid background and elongated segmented structures. What is the most likely diagnosis?
 - (a) *Chlamydia trachomatis*
 - (b) *Candida albicans*
 - (c) *Trichomonas vaginalis*
 - (d) *Gardnerella vaginalis*

Note: The Diagnostic Cytology exam includes questions linked to images.

CLINICAL GENETICS

1. Which of the following syndromes is primarily caused by a chromosome disorder?
 - (a) Turner syndrome
 - (b) Cystic fibrosis
 - (c) Duchenne muscular dystrophy
 - (d) Tay-Sachs disease
2. A developmentally delayed two-year old child with hypotonia is missing band 15q12 on one chromosome 15. Which of the following is consistent with this condition?
 - (a) Deletion of the paternal chromosome
 - (b) Maternal uniparental disomy
 - (c) Angelman's syndrome
 - (d) Pallister-Killian syndrome
3. Which of the following steps is part of the polymerase chain reaction (PCR)?
 - (a) Autoradiography
 - (b) Primer annealing
 - (c) Stringency washes
 - (d) Probe hybridization

Note: The Clinical Genetics exam includes images for analysis.

Top 10 Myths regarding the CSMLS Exam

by the Certification and Prior Learning Assessment Team

1. Only a certain number of candidates can pass the exam at any given session.

Myth! Every exam has a “pass mark”, which is the total percentage score you must reach to pass. Anyone who achieves this mark passes the exam, and there is no limit to the number of candidates who can pass. If everyone who writes the exam reached the pass mark, then everyone would pass!

The pass mark, which is set by the Angoff method, varies from exam to exam depending on the difficulty of that particular exam. You can find a detailed explanation of the Angoff method inside the Examination Handbooks located on our website.

2. The exam is easier in some provinces/cities than in others.

Myth. Exam candidates from each discipline, write the same exam, on the same day, from Newfoundland and Labrador to British Columbia.

3. If you pass the MLA Certification Exam, this automatically makes you eligible to write the MLT exam.

Incorrect. There are only two ways to be eligible to challenge the MLT exam:

To be a recent graduate of a MLT program that is accredited by the Canadian Medical Association (CMA). To see a list of CMA accredited programs, please visit our website and review the CMA Accredited Training Program Handbook. (Select “Certification” from the main menu, then select “Accredited Training Programs”)

To be deemed eligible to the exam through our Prior Learning Assessment (PLA) process. This process is designed for Internationally Educated Medical Laboratory Technologists who wish to obtain CSMLS Certification. For more information regarding the PLA process, please review the PLA Handbook, located on our website. (Select “Internationally Educated Technologists” from the main menu)

4. The CSMLS Certification and PLA team writes the exam questions.

No way! CSMLS employees do not write exam questions, we only provide administrative support to item writing workshops.

The CSMLS hosts facilitated item writing workshops a few times a year. The workshop trains volunteers on how to write and critique exam questions. The panel is comprised of: members that have subject matter expertise in each discipline, members from across Canada (to avoid regional bias), French representation (to ensure questions can be translated), and a mix of educators and technologists practising in a clinical setting, both private and public.

Are you interested in volunteering for an Item Writing Workshop (developing exam questions)? Contact Lynn Policelli at lynnp@csmls.org.

5. The exam is harder for internationally educated MLTs than Canadian trained.

Myth! Everyone writing the General Certification exam at a particular session is writing the exact same exam, no matter where they were educated or where in the country they are writing. This is also true for the MLA, Clinical Genetics and Diagnostic Cytology exams.

6. If I am unsuccessful on my exam, I can wait to rewrite and skip the next available exam.

False. If you are unsuccessful in passing the exam you are expected to re-apply and write the next available exam.

7. There is no need to study for the first attempt.

We wouldn't recommend it! It is in your best interest and the CSMLS team highly recommends that you study for each exam attempt. Remember, you have a limited number of attempts.

It is important to use the competency profile, blue print and text book reference list to help organize your study efforts. These documents can be downloaded from the website. (Select Certification from the main menu, and then select "Competency Profiles")

8. There are six people writing the exam at my location so it should only take a week or so to get my results.

If only it were that simple! 569 MLT candidates wrote the June 8th, 2010 MLT exam. Exam material is shipped to our office from across the country. Once each exam is accounted for, our process begins. Each exam package is opened and checked.

Computer answer sheets (aka bubble sheets) are electronically scanned. We perform numerous quality control measures and analyze statistics based on each exam question. Finally, when quality assurance is complete, we will mail your results to you. This process can take up to 45 days to complete. We appreciate your continued patience; this is a very busy time for us.

9. You must be a member of CSMLS to write the exam.

This is not true. You do not have to be a member to write the exam. However, there are definite benefits of membership. First, you receive a discounted rate to write the exam. You can save over \$200.00 on exam fees.

10. There is a discount on the exam fee for rewrites.

Unfortunately not. The exam fee (for both your first attempt and subsequent attempts) is based solely on your membership status.

If you have any other myths you need busted, please contact us for more information or visit our website at www.csmls.org.

IMPORTANT INFORMATION ABOUT THE COLLECTION, USE AND DISCLOSURE OF YOUR PERSONAL INFORMATION

CSMLS is committed to protecting our members' privacy. This commitment is clearly stated in our mission statement: "*We value the equality, dignity, diversity and privacy of all.*" It is also reflected in our business practices. This information sheet describes how CSMLS collects, uses, shares and protects the personal information gathered from its members.

Collection and Use of Personal Information

Personal information is any information about an identifiable person.

CSMLS collects from its members the following personal information:

- name
- address
- telephone number
- email address
- fax number
- employer's name, address, telephone number

For the following identified purposes:

- to process memberships
- to process professional liability insurance
- to mail complimentary subscriptions to the journal (CJMLS)
- to establish eligibility for the CSMLS Member Discount
- to send out information on CSMLS events, program and/or services
- to process invoices for events, goods or services
- to provide data for research reports
- to prepare the CSMLS Roster

CSMLS may also collect the following personal information about its members:

- certification history
- participation on volunteer committees and task forces
- participation in continuing education courses
- attendance at congress
- provincial society/regulatory body membership

Disclosure of Personal Information

Other than as stated below, CSMLS does not disclose any personal information to third parties. Unless CSMLS members express that they do not wish to have their personal information disclosed, CSMLS discloses personal information to the following third parties for the following identified purposes:

1. Address information may be given to approved providers of the CSMLS Member Discount Programs so that they can send information to members about their services.
2. Address information may be provided to provincial societies for marketing purposes.
CSMLS does not disclose personal information for the purpose of telemarketing any program or service.

Both 1 and 2 require the approval of the CSMLS Board of Directors.

3. Members' names, year of certification, membership status and city and province of residence are published annually in the Roster. The Roster is published in print form and is posted to the public portion of the CSMLS website.

The Personal Information Protection and Electronic Documents Act is federal legislation that governs the collection, use and disclosure of personal information. In accordance with this legislation, we must obtain our members' consent to collect, use and disclose personal information for the purposes stated above. **If you do not wish to have your personal information disclosed to third parties as described above, please complete the CSMLS Information Consent Section.**

Security and Safeguards

The importance of security for all personal information collected by CSMLS is of utmost concern to us. All personal information collected by CSMLS is securely stored in a computer database with a level of security appropriate to the sensitivity of the personal information collected. Member records can only be accessed by authorized members of the CSMLS staff.

Personal Information/Privacy Inquiries

If you have any questions about CSMLS privacy policies and procedures, or if you wish to access your member record, please contact:

David Dion, Director, Membership and Administration
Telephone: 1-800-263-8277 ext. 8682

Fax: 905-528-4968

Email: daved@csmls.org



REQUEST FOR EXAM CANCELLATION

POLICY:

- If you cannot take the exam and want to cancel your application, you must send this form at least **30 days before the exam date**.
- \$100 (Cdn) of the exam fee is non-refundable.
- We will process refunds within four (4) weeks of receipt.
- We will refund your exam fee only. **We will not refund late fees and non-member surcharges.**

Miss Mrs Ms Mr

CSMLS#: _____

Last Name (please print above)	First Name	Middle Initial
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Address	City	Province	Postal Code
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Telephone No.	Business Telephone No.
---------------	------------------------

Fax No.	Email Address
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Exam Discipline: General Clinical Genetics Diagnostic Cytology MLA

Reason for cancellation:

PO Box 2830, LCD 1 · Hamilton, ON · L8N 3N8
 Telephone: (905) 528-8642 Fax: (905) 528-4968



REQUEST TO CHANGE EXAM SITE

POLICY:

- If you need to change to another designated exam site, you must send this form at least **30 days before the exam date.**
- We will do everything we can to change your site, but we cannot guarantee that we will be able to do so.

Miss Mrs Ms Mr

CSMLS#: _____

Last Name (please print above)	First Name	Middle Initial
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Address	City	Province	Postal Code
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Telephone No.	Business Telephone No.
---------------	------------------------

Fax No.	Email Address
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Exam Discipline: General Clinical Genetics Diagnostic Cytology MLA

Initial Exam Site Selection City: _____ Exam site #: _____

New Exam Site Selection City: _____ Exam site #: _____

Reason for change:

PO Box 2830, LCD 1 · Hamilton, ON · L8N 3N8
 Telephone: (905) 528-8642 Fax: (905) 528-4968



**NAME CHANGE AND/OR ADDRESS CHANGE
OR ONLINE AT WWW.CSMLS.ORG**

POLICY:

- If you change your name or address, you must let us know by sending in this form.
- Unless you send this form, we will send all correspondence about your exam, including the exam results, to the address written on your exam application.
- If you have changed your name, you must also send proof of the change with this form.

Miss Mrs Ms Mr

CSMLS#: _____

Last Name (please print above)	First Name	Middle Initial
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Former Last Name (if applicable)	First Name	Middle Initial
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Miss Mrs Ms Mr

CSMLS#: _____

Last Name (please print above)	First Name	Middle Initial
--------------------------------	------------	----------------

NEW Address	City	Province	Postal Code
--------------------	------	----------	-------------

Telephone No.	Business Telephone No.
---------------	------------------------

Fax No.	Email Address
---------	---------------

Date of the Change _____

PO Box 2830, LCD 1 · Hamilton, ON · L8N 3N8
Telephone: (905) 528-8642 Fax: (905) 528-4968

THE ANGOFF METHOD OF STANDARD-SETTING FOR CRITERION-REFERENCED REGISTRATION/LICENSURE EXAMINATIONS

By Canadian Nurses Association, Testing Division, Ottawa, ON

INTRODUCTION - Many health and health related agencies require registration/licensure for their professionals as one means of assuring the quality of practice. As a standardized examination is often a requirement for registration/licensure, determination of an appropriate pass mark for the examination is essential to the effectiveness of the process.

RELEVANT ISSUES - Setting a pass mark for an examination is setting a standard of performance on which decisions will be made about an individual's level of competence in a given field of practice. The pass mark determination is a judgment made by informed individuals (i.e., experts in the field of practice). It is arrived at through a rational discussion of the field of practice as well as an awareness of the consequences involved when a decision affecting individuals is made.

THE PASS MARK AND CONSEQUENCES - Whenever a pass mark is determined for a registration/licensure examination, there are a number of potential consequences that must be anticipated: an inappropriately low pass mark will allow non-competent candidates to practice, perhaps at the expense of the public welfare; an unrealistically high pass mark will exclude competent candidates from being registered/licensed.

The accuracy and precision of the measuring instrument (i.e., examination validity and reliability) must also be considered. Examinations are not perfect: they cannot include all the knowledge and skills in a given field of practice. An examination can only sample the field. Furthermore, if it were possible to repeatedly administer the same examination to a single candidate 100 times, the candidate's score would likely not be exactly the same each time. The inconsistency of the scores is a result of the reliability of the examination and the variables affecting candidate performance (such as anxiety level and health).

THE ANGOFF METHOD - The Angoff method requires expert judges to discuss the issues involved in determining a pass mark and to evaluate the examination by using a well-defined and rational procedure.

1. COMPETENCE AND THE BORDERLINE CANDIDATE

The Angoff method is based on the concept of the borderline or minimally competent candidate. The minimally competent candidate can be conceptualized as the candidate possessing the minimum level of knowledge and skills necessary to perform at a registration/licensure level. This candidate performs at a level "on the borderline" between acceptable and unacceptable performance. It is essential that each judge arrive at a clear and specific definition of the minimally competent candidate.

To better understand the concept of the minimally competent candidate, it is often helpful to think of the people you work with every day; a few of them are the "superstars" performing at a level well above the majority, while others perform rather poorly and perhaps should not be practising. Somewhere between these two extremes is the group that performs at the level of minimum competence. The borderline candidate belongs to the group that just qualifies for registration/licensure.

2. RATING THE ITEMS

The Angoff method requires the judges to independently rate each item in the examination in terms of the minimally competent candidate. For each item, each judge answers the question: "In your opinion, what percentage of minimally competent candidates will answer this item correctly?" Alternately phrased, "Given 100 minimally competent candidates, how many will answer this item correctly?" The judge then indicates the appropriate percentage on the rating form and proceeds with the next item.

One common error made when rating items is to base the rating on the average candidate or the exceptional candidate rather than on the borderline candidate.

OVERALL AVERAGE RATING - Another potential error involves the interpretation of the question asked for each item. The items are to be rated in terms of how many borderline candidates will answer the item correctly. In a large group of borderline candidates, only some may actually know the correct response. It should not be assumed that all borderline candidates will know the answer. Finally, although item statistics may be used to provide additional information to the judges, the ratings should not be based solely on

Table 1: Example of the Angoff Method

Item #	Judges' Rating (%) Average						Average Rating
	Judge 1	Judge 2	Judge 3	Judge 4	Judge 5	Judge 6	
1	65	70	65	65	70	65	67
2	85	70	60	80	70	80	74
3	70	65	85-75	70	45-50	70	67
4	75	60	65	70	75	70	69
Overall Average Rating							

these statistics; item statistics are calculated on the entire candidate population, not on the borderline group alone.

3. DETERMINING THE PASS MARK

As an illustration of the rating process, consider a fictitious application of the Angoff method, with a panel of six judges setting the pass mark on a four items exam. Following the orientation session, the judges provide independent ratings on each of the items in the exam. The ratings obtained are presented in Table 1. With a 30%-rule specified to define the target level of agreement, items 1, 2, and 4 require no post-rating discussion (i.e., for each of these items, the extreme ratings do not differ by more than 30%). Item 3, however, is identified as requiring discussion because of the 40% difference in the ratings of Judge 3 and Judge 5 on this item. As a result of the discussion, Judge 3 decreases her rating from 85% to 75% and Judge 5 increases his rating from 45% to 50%. The average ratings are then calculated for each item, and the average of these values is calculated, to arrive at an overall pass mark of 69%.

4. FACTORS FOR SUCCESSFUL IMPLEMENTATION

A number of factors contribute to the successful implementation of the Angoff method. An effective training session is essential in orienting the judges to the concept of the minimally competent candidate. Discussion and modification of extreme ratings help ensure that a defensible and valid cut-off score is established. As well, some researchers and practitioners recommend consideration of methods for monitoring and refining the Angoff method. For example, statistical techniques exist for evaluating intrajudge and interjudge consistency, and for estimating the precision or stability of pass marks generated by the Angoff method.

SUMMARY - The Angoff method allows expert judges to determine an appropriate pass mark for an examination, based on a discussion of the issues involved in registration/licensure and their assessment of the examination. A major advantage to this methodology is that the determined pass mark is based on the content of the examination and not on group performance.

PROVINCIAL REGULATORY BODIES

ALBERTA COLLEGE OF MEDICAL LABORATORY TECHNOLOGISTS, (ACMLT)

301-9426 51 Avenue NW
Edmonton, Alberta T6E 5A6
Telephone: (780) 435-5452 or (800) 265-9351
Fax: (780) 437-1442

www.acmlt.org

COLLEGE OF MEDICAL LABORATORY TECHNOLOGISTS OF ONTARIO, (CMLTO)

36 Toronto St, Suite 950
Toronto ON M5C 2C5
Telephone: (416) 861-9605 (800) 323-9672
Fax (416) 861-0934

www.cmlto.com

NEW BRUNSWICK SOCIETY OF MEDICAL LABORATORY TECHNOLOGISTS, (NBSMLT)

PO Box 1812
Moncton, NB E1C 9X6
Telephone: (506) 758-9956
Fax: (506) 758-9963

www.nbsmlt.nb.ca

ORDRE PROFESSIONNEL DES TECHNOLOGISTES MÉDICAUX DU QUÉBEC, (OPTMQ)

281, av. Laurier Est
Montréal, QC H2T 1G2
Telephone: (514) 527-9811 or (800) 567-7763
Fax (514) 527-7314

www.optmq.org

SASKATCHEWAN SOCIETY OF MEDICAL LABORATORY TECHNOLOGISTS, (SSMLT)

<u>Courier Address</u>	<u>Mailing Address</u>
201-2124 Broad St Regina, SK S4P 1Y5	PO Box 3837 Regina, SK S4P 3R8

Phone/Fax: (306) 352-6791

www.ssmlt.ca

NOVA SCOTIA COLLEGE OF MEDICAL LABORATORY TECHNOLOGISTS, (NSCMLT)

265 – 5991 Spring Garden Rd
Halifax Professional Center
Halifax, NS B3H 1Y6
Telephone: (902) 453-9605
Fax: (902) 454-3535

www.nscmlt.org

COLLEGE OF MEDICAL LABORATORY TECHNOLOGISTS OF MANITOBA (CMLTM)

146 – 2025 Corydon Ave
Winnipeg, MB R3P 0N5
Telephone: (204) 231-0311
Fax: (204) 790-2479

www.cmltm.ca

PROVINCIAL SOCIETIES

BC SOCIETY OF LABORATORY SCIENCE, (BCSLs)

720-999 W Broadway Ave
Vancouver, BC V5Z 1K5
Telephone(604) 714-1760 or (800) 304-0033
Fax: (604) 738-4080

www.bcsls.net

PRINCE EDWARD ISLAND SOCIETY OF MEDICAL TECHNOLOGISTS (PEISMT)

C/o Queen Elizabeth Hospital
Attn: Marietta MacCormack
PO Box 6600
Charlottetown, PEI C1A 8T5

www.peismt.org

NEWFOUNDLAND AND LABRADOR SOCIETY OF LABORATORY TECHNOLOGISTS (NLSLT)

PO Box 39057
430 Topsail Rd
St. John's, NF A1E 5Y7
Telephone: (709) 754-8324

www.nlsmls.ca

ONTARIO SOCIETY OF MEDICAL TECHNOLOGISTS, (OSMT)

234 Eglinton Ave East, Suite 402
Toronto, ON M4P 1K5
Telephone: (416) 485-6768 or (800) 461-6768
Fax (416) 485 7660

www.osmt.org

MEDICAL LABORATORY SCIENCE ASSOCIATION OF YUKON (MLSAY)

c/o Laboratory, Whitehorse General Hospital
5 Hospital Rd
Whitehorse, YK Y1A 3H7

President@mlsay.org

EXAM SITES

We hold exams at each site listed below for the sessions indicated by a checkmark.
Please indicate your choice on the application.

We do not offer the CSMLS exams outside of Canada.

	June	October	February
NEWFOUNDLAND			
E11 St John's	✓	✓	✓
NOVA SCOTIA			
E12 Halifax	✓	✓	✓
NEW BRUNSWICK			
E13 Saint John	✓	✓	✓
E14 Moncton (French Site)	✓	✓	✓
QUÉBEC			
E20 Montréal (English Site)	✓	✓	✓
E21 Chicoutimi	✓		
E22 Rimouski	✓		
E23 Montréal (Collège de Rosemont)	✓	✓	✓
E24 Shawinigan	✓		
E25 Sherbrooke	✓		
E26 St-Jean	✓		
E27 St-Jérôme	✓		
E28 Ste-Foy	✓		
E29 St-Hyacinthe	✓		

	June	October	February
ONTARIO			
E41 Hamilton	✓	✓	✓
E43 Windsor	✓		
E44 Kingston	✓		
E32 Sudbury	✓		
E45 Toronto	✓	✓	✓
E46 Oshawa	✓		
MANITOBA			
E53 Winnipeg	✓	✓	✓
SASKATCHEWAN			
E61 Saskatoon	✓	✓	✓
E62 Regina	✓		
ALBERTA			
E73 Edmonton	✓	✓	✓
E72 Calgary	✓	✓	✓
BRITISH COLUMBIA			
E81 Vancouver	✓	✓	✓
E85 Prince George	✓		

Space is limited at some exam sites, so you may not be assigned to the site you choose.
We reserve the right to cancel an exam site if there are fewer than five (5) candidates.
We reserve the right to assign you to your exam centre.
We reserve the right to monitor exam sites.

APPLICATION FOR ENTRY LEVEL CERTIFICATION EXAMINATION

Miss Mrs Ms Mr

CSMLS#: _____

Last Name (Please print above)	First Name	Middle Initial
Address	City	Province
		Postal Code
Telephone No.	Business Telephone No.	
Fax No.	Email	

Please print your full name here, including accents, as you wish it to appear on your CSMLS certificate

Yes, I would like my name to be included on the newly certified member list that is published in the CJMLS.

Exam Discipline:

- General
- Diagnostic Cytology
- Clinical Genetics

Exam Session:

- February
- June
- October

Language:

- English
- French

Site: _____

City: _____

Eligibility Route:
(Select Route)

Option A
Graduate from a CMA training program:

Name of Institution	Date of Completion
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Option B
CSMLS Prior Learning Assessment Candidate

Privacy Agreement - I have read the privacy agreement and accept the terms with the following options:

- Please include my name in the list sent to Member Discount Programs/Partners.
- Please include my name in the list sent to CSMLS Partner Provincial Societies.
- Please include my name in the list of certified members (Roster - Print & Web).

Applicant's Statement:

- I declare that the above information is true and hereby apply to write the CSMLS certification exam.
- I have read and agree to abide by the examination handbook: policies, procedures, rules and eligibility requirements.
- I understand that final acceptance to the certification examination depends on successfully meeting all eligibility requirements.
- I understand there is a non-refundable portion of the exam fee.

Print Name

Signature

Date

~ Once the exam application is received by the CSMLS, processing may take 4-6 weeks ~

Acceptable forms of payment: **Canadian cheque, Canadian money order, Visa, MasterCard or American Express only.**
Any other form of payment will be rejected and your application/fee returned to you.

Please find enclosed \$ _____	
<input type="checkbox"/> Cheque <input type="checkbox"/> Money Order <input type="checkbox"/> Visa <input type="checkbox"/> MasterCard <input type="checkbox"/> American Express	
Credit Card:	_____ / _____ / _____
Exp. Date:	_____ / _____
Signature:	_____

CSMLS USE ONLY
Date Received: _____
Status: _____
Acknowledgment - Email: _____
Acknowledgment - Letter: _____



APPLY ONLINE

~ first time applicants only ~

or

BEFORE MAILING YOUR APPLICATION,

MAKE SURE YOU:

- Print clearly and concisely
- Complete all appropriate sections
- Sign "Applicant's Statement"
- Enclose examination fee

IMPORTANT DATES TO REMEMBER

EXAM SESSION	EXAM REGISTRATION OPENS	APPLICATION DEADLINE	LATE APPLICATION DEADLINE
June	February 1	March 1	April 1
October	June 1	July 1	August 1
February	October 1	November 1	December 1



Canadian Society for Medical Laboratory Science
 PO Box 2830, LCD 1 · Hamilton, ON · L8N 3N8
 T: (905) 528-8642 or (800) 263-8277 · F: (905) 528-4968
 E: exam@csmls.org
www.csmls.org