

AMT Certified Medical Laboratory Assistant (CMLA) Certification Examination Specification Summary

Number of items in category	Content Category
{17}	I. Chemistry (8.5% of test)
{17}	II. Hematology (8.5% of test)
{10}	III. Immunology and Serology (5% of test)
{ 8}	IV. Microbiology (4% of test)
{14}	V. Urinalysis (7% of test)
{27}	VI. Quality Assurance/Quality Control (13.5% of test)
{ 6}	VII. Microscopy (3% of test)
{18}	VIII. Phlebotomy (9% of test)
{16}	IX. Patient Test Management and Specimen Collection (8% of test)
{16}	X. Safety Standards, Procedures, and OSHA Regulations (8% of test)
{16}	XI. Terminology, Anatomy, and Physiology (8% of test)
{17}	XII. Legal, Ethical, Confidential, and Professional Considerations / HIPAA and Patient's Bill of Rights (8.5% of test)
{10}	XIII. Clerical Skills and Duties (5% of test)
{ 8}	XIV. Communications and Interpersonal Relations (4% of test)
<u>200</u>	

**American Medical Technologists
Certified Medical Laboratory Assistant (CMLA)
Competencies**

Number
of items
in category

Content Area, Sub-area, and Competency

17

I. CHEMISTRY

A. General Knowledge

1. Know terminology related to clinical chemistry including:

supernatant	precision	linearity	coefficient of variation
decant	reliability	enzymes	standard deviation
precipitate	shift	mean value	
accuracy	trend	electrolytes	

2. Know designations and abbreviations used for weights and measures

3. Collect and handle blood specimens for analysis

a. Know differences between serum, plasma, and whole blood

b. Understand precautions used in collecting blood samples

- Know how to prevent hemolysis

- Collect blood in collecting tubes for analysis (clotted and anticoagulated blood)

- Use proper anticoagulants for each analysis

- Know effects of improper anticoagulant use

4. Know how to handle and preserve body fluids for chemical analysis

a. Know the types and uses of urine preservatives

b. Know how to handle and process all body fluids

5. Perform all necessary quality control and quality assurance in the clinical chemistry laboratory

a. Know daily quality control and use of results

b. Know proficiency testing

c. Know quality assurance policies and procedures

6. Know cleaning and maintenance of instruments

B. Instrumentation

1. Know automated instrumentation

2. Perform daily, weekly, and monthly maintenance on chemical analyzers

3. Know the operation and principles of commonly used special analyzers

4. Know use and maintenance of other laboratory instruments

C. Hepatic (liver) Function Tests

1. Know terminology associated with liver function testing

D. Carbohydrate Metabolism Tests

1. Know terminology related to carbohydrate metabolism tests including: ketone, insulin, and carbohydrate
2. Know types of glucose analysis tests
 - a. Know true glucose tests (glucose-specific)
 - b. Perform tests for glucose (blood and urine)

E. Endocrinology

1. Know terminology associated with thyroid testing

F. Electrolytes

1. Know terminology associated with electrolytes

G. Kidney Function Tests

1. Know terminology associated with kidney function tests
 - a. Perform test for blood urea nitrogen (BUN)
 - b. Perform test for creatinine

H. Point-of-Care Testing

1. Know procedures for point-of-care testing

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II. HEMATOLOGY

A. General Knowledge

1. Know terminology related to hematology including:

hematology	platelet	hemoglobin
cells	leukocytes	
blood	reticulocytes	
serum	erythrocytes	
plasma	hematocrit	

2. Know functions of the blood
3. Recognize the difference between platelets, erythrocytes, and leukocytes

B. Erythrocyte Procedures

1. Maintain familiarity with red blood cell indices: MCV, MCH, and MCHC
2. Know how to perform Wintrobe and Westergren erythrocyte sedimentation rates (ESR)
3. Know how to perform spun hematocrit
4. Know how to perform hemoglobin testing

C. Instrumentation

1. Maintain familiarity with automated cell counters
2. Know use and maintenance of laboratory instruments including: microscope, centrifuge, etc.

D. Coagulation and Hemostasis

1. Know the clinical significance of coagulation
2. Know the importance of proper specimen collection
 - a. Know the effect of short draw
 - b. Know the effect of a hemolyzed specimen
 - c. Know the limit of time plasma can set on the cells
3. Know how to perform the prothrombin time (PT) test and what medication it monitors
4. Know how to perform the partial thromboplastin time (PTT) test

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III. IMMUNOLOGY AND SEROLOGY

A. General Knowledge

1. Know terminology related to immunology and serology including:

antigen hemolysis blood serum versus plasma
antibody RPR

2. Know the principles of antigen-antibody reaction
3. Know that RPR is a test for syphilis
4. Know what diseases cause false reactive RPRs

B. Serological Tests for Syphilis

1. Know how to perform RPR
2. Know quality control procedures for RPR

C. Analytic Procedures

1. Know how to perform heterophile agglutination (mono test)
2. Know how to perform qualitative rheumatoid arthritis tests (latex agglutination)
3. Know how to perform qualitative pregnancy tests

D. Special Procedures

1. Know how to perform qualitative acquired immune deficiency syndrome (AIDS) screen

E. Immunohematology

1. Know that there are blood groups, blood types, and Rh factors

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IV. MICROBIOLOGY

A. General Knowledge

1. Know terminology related to bacteriology including: bacteria, aerobic, pathogenic, and anaerobic
2. Know basic tests for microorganisms
 - a. Gram's stain
 - b. KOH
 - c. Wet preps

3. Prepare and use Gram's stain

B. Media Preparation, Techniques, and Cultures

1. Know how to prepare bacterial smears and stain with Gram's stain
2. Know uses of culture media including: blood agar, SSA agar, chocolate agar, Thayer-Martin chocolate agar, eosin methylene blue (EMB), thioglycollate broth, and MacConkey agar
3. Know the proper collection and transportation of specimens for culture

C. Special Tests

1. Perform special tests, including Group A streptococci
 - rapid enzyme immunoassay test (or other antigen detection kits) from throat swabs or vaginal swabs
 - cultures for beta hemolysis screening

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V. URINALYSIS

A. General Knowledge

1. Know terminology related to urinalysis
2. Collect random, midstream, and timed (2, 12, 24-hour, etc.) urine specimens

B. Anatomy and Physiology

1. Know the physical properties of urine
2. Know the chemical properties of urine
3. Know the microscopic structures found in urine

C. Analytic Procedures

1. Perform urinalysis to obtain physical, chemical, and microscopic findings
2. Know and perform individual chemical tests on urine including: pH, protein, glucose, ketones, nitrate, bilirubin, urobilinogen, occult blood, specific gravity, and leukocyte esterase

D. Microscopic Techniques

1. Know names and descriptions of blood cells found in urine
2. Know names, descriptions, and types of epithelial cells found in urine
3. Know descriptions and definitions of casts found in urine
4. Identify and know descriptions of yeasts, bacteria, and parasites found in urine
5. Know types of crystals found in urine
6. Recognize amorphous mucus, spermatozoa, and bacteria found in urine

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VI. QUALITY ASSURANCE AND QUALITY CONTROL

A. Quality Assurance and Quality Control

1. Employ quality control/quality assurance (QC/QA)
 - a. Know and recognize the difference between QC and QA
 - b. Know proficiency testing
 - c. Perform all QC/QA procedures in the laboratory

2. Know and observe quality control and quality assurance regulations
3. Observe safety regulations and employ safety precautions

6 VII. PHYSICIAN-PERFORMED MICROSCOPY PROCEDURES (PPMP)

A. General knowledge

1. Know who can perform PPMP procedures under regulations
2. Know the tests outlined under the PPMP category: wet preps, KOH, fungal scrapings, semen examination for motility, nasal smears for eosinophils, arborization, and fecal examination for WBCs, pinworms, etc.

18 VIII. PHLEBOTOMY

A. Identify correct patient properly

B. Select appropriate containers for specimens and know requirements for container identification

C. Know physiological aspects of blood collection

D. Prepare patient for various tests

E. Select proper venipuncture site

F. Perform venipuncture

G. Collect specimen in proper tube-draw sequence

H. Perform capillary punctures

I. Perform capillary punctures on infants

J. Provide proper post care of venous puncture sites

K. Handle blood samples to maintain specimen integrity

16 IX. PATIENT TEST MANAGEMENT AND SPECIMEN COLLECTION

A. Perform proper blood film preparation

B. Properly collect and handle specimens with time/temperature requirements

C. Process specimens for shipping

D. Instruct patient in the collection of urine specimens

E. Instruct patient in the collection of other specimens (e.g., semen, feces, sputum)

- 16** **X. SAFETY STANDARDS, PROCEDURES, AND OSHA REGULATIONS**
- A. Identify appropriate regulatory and standard-setting agencies*
 - B. Know the use of material safety data sheets*
 - C. Employ universal precautions*
 - D. Employ infection control and isolation techniques*
 - E. Recognize patient problems related to syncope (fainting), nausea, and other complications*
- 16** **XI. TERMINOLOGY, ANATOMY, AND PHYSIOLOGY**
- A. Employ basic terminology*
 - B. Know basic anatomy*
 - C. Know basic physiological systems*
- 17** **XII. LEGAL, ETHICAL, CONFIDENTIAL, AND PROFESSIONAL CONSIDERATIONS / HIPAA AND PATIENT'S BILL OF RIGHTS**
- A. Know principles of liability regarding the practice of phlebotomy*
 - 1. Know use of consent forms
 - 2. Know use of waiver of liability-Medicare
 - 3. Know who is permitted to order tests
 - 4. Know right of patient to refuse treatment
 - 5. Employ proper identification of patient and specimen
 - B. Perform duties professionally and ethically*
 - 1. Observe CLIA regulations
 - 2. Observe OSHA regulations
 - C. Employ professional conduct and appearance in the performance of duties*
 - 1. Ensure appropriate personal appearance
 - 2. Employ professional mannerisms and behavior
 - 3. Observe tenets of confidentiality
 - 4. Observe tenets of appropriate record release
- 10** **XIII. CLERICAL SKILLS AND DUTIES**
- A. Chart or file laboratory-generated reports properly*
 - 1. Know what constitutes a complete and final report
 - 2. Know reporting and documentation of abnormal results

B. Enter, retrieve, and verify patient collection data and special notations using appropriate sources

C. Maintain inventory levels, order and restock supplies

D. Employ billing procedures

8 XIV. PROFESSIONAL COMMUNICATION AND INTERPERSONAL RELATIONS

A. Develop and use proper and professional communication skills with staff, patients, and families

B. Communicate with patient units regarding special scheduling and special situations

C. Inform patients of special test requirements

D. Use proper technique and etiquette for answering the telephone and providing information

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Task and Knowledge Inventory Note

The task and knowledge areas included in this inventory are considered by American Medical Technologists to be *representative* of the medical laboratory assistant's role. This document should be considered dynamic, to reflect the assistant's current role. Therefore, tasks may be added, removed, or modified on an ongoing basis. The content category weights should be considered reliable, but approximate.