American College of Laboratory Animal Medicine

Candidate Guide

ACLAM Certification Exam
Table of Contents

About ACLAM.........................................................................................................................3
The Purpose of ACLAM...........................................................................................................4
Purpose of the Candidate Guide...............................................................................................5
Examination Development..........................................................................................................5
Examination Rules.....................................................................................................................6
Application/Examination Fees..................................................................................................6
Refunds......................................................................................................................................6
Special Administrations............................................................................................................7
Examination Registration..........................................................................................................7
Examination Dates.....................................................................................................................7
Eligibility Requirements............................................................................................................7-11
Admission to the Examination...................................................................................................12
Examination Content Outline....................................................................................................12-14
Sample Questions.....................................................................................................................14-15
Exam Disclosure.........................................................................................................................15
Scoring.......................................................................................................................................15
About the American College of Laboratory Animal Medicine (ACLAM)

ACLAM is a specialty board recognized by the American Veterinary Medical Association (AVMA) as the certifying organization for laboratory animal medicine.

ACLAM was chartered on February 18, 1957 and is incorporated under the laws of the State of Illinois as a not-for-profit organization. It was originally established as the American Board of Laboratory Animal Medicine by 18 “Charter Fellows” who had made significant contributions to laboratory animal medicine and were actively engaged in the specialty. The name of the organization was changed to its present form on August 24, 1961, and the term “Fellow” was discontinued in favor of “Diplomate”.

ACLAM total membership comprises over 1,100 Diplomates including active, retired and honorary members.
The Purpose of ACLAM

Since its foundation in 1957, ACLAM’s goals are:

- encourage education, training, and research in laboratory animal medicine;
- establish standards of training and experience for veterinarians professionally involved with the care and health of laboratory animals; and
- recognize qualified persons in laboratory animal medicine, though certification examination and other means.

ACLAM’s highest priority is the testing and certification of qualified veterinarians who specialize in laboratory animal medicine. Candidates who pass the ACLAM certification exam receive the title of Diplomate.

Through our educational programs, members and the scientific community are apprised of advances in laboratory animal medicine.
Purpose of the Candidate Guide

This Candidate Guide has been developed by ACLAM & Schroeder Measurement Technologies, Inc. The purpose of this Candidate Guide is to provide you with guidance for the ACLAM certification exam process.

Examination Development

ACLAM has contracted with SMT/IQT (Schroeder Measurement Technologies/Iso-Quality Testing) to develop, administer, and score the ACLAM certification exam. SMT/IQT is an established full-service international testing company serving the needs of licensing boards and credentialing agencies with a wide range of test development and computer-based administration services at testing centers.

The development of a valid examination for the ACLAM certification process begins with a clear and concise definition of the knowledge, skills, and abilities needed for competent job performance. Using interviews, surveys, observation, and group discussions, ACLAM works with experts in the field of laboratory animal medicine to delineate critical job components. The knowledge and skill bases for the questions in the examination are derived from the actual practice of the profession including: animal resource management, clinical and preventive medicine, surgery, anesthesia, analgesia, animal behavior, regulatory compliance, animal research support and training among others, as outlined in the 2019 ACLAM Role Delineation Document.
Examination Rules

Electronic devices, books, papers, or other reference materials are not allowed in the examination room. An area will be provided for storage of such materials. Please check your admission letter for additional information.

No examination materials or documents of any type may be taken from the room by any candidate.

The examination will be given only on the date and time noted on the Admission Letter. If an emergency arises and you are unable to take the examination as scheduled, you may call ACLAM or, on the day of the test, the examination site telephone number listed on your Admission Letter.

No questions concerning the content of the examination may be asked during the examination. The candidate should listen carefully to the directions given by the Proctor and read the directions carefully.

Application/Examination Fees

Application Fee $200

Exam Fee $600

Payments can be made online at the ACLAM website.

Refunds

The application fee is a one-time non-refundable payment. The exam fee, once notified that you are credentialed, may be applied to a future year or refunded depending on your situation. See policy below:

    ACLAM POLICY- TAKING THE EXAM

One is entitled to take the examination up to a maximum of three times during the next three years after becoming Board eligible. Failure to successfully pass the exam after three consecutive attempts results in one no longer being ACLAM Board eligible, and will require that you submit another application, pay another application and examination fee, and pass the examination before you can be certified as a Diplomate.

Opting out of the exam for other than a medical emergency for you or someone in your immediate family or in the case of the military an overseas or short notice deployment will result in the loss of that year of eligibility.
Special Administrations

Individuals with disabilities that require modifications in test administration may request specific procedure changes, in writing, to ACLAM, no fewer than 60 days prior to the scheduled test date. With the written request, the candidate must provide official documentation of the disability. Candidates should contact ACLAM Executive Director on what constitutes official documentation. ACLAM Executive Director will offer appropriate modifications to the procedures when documentation supports the need for them.

Examination Registration

Eligibility requirements are determined by ACLAM. Once you have been approved to take your examination, you will receive an email from Iso-Quality Testing with specific directions to access their online scheduling system. Please see a sample email below.

Dear Sample Candidate,

You have now been approved by American College of Laboratory Animal Medicine to access the computer based ACLAM Examination. Please proceed as follows:

1. Go to our home page: www.IQTTesting.com
2. Using the option “Exam Registration”
   Enter your Username and Passcode to login. These are:

   Username: SAMPLE
   Passcode: xtrwfguc

After logging in, please follow the on-screen instructions for accessing the exam.

Should you require assistance, you can click on the “Contact Us” button on the home page and then send a message to customer service, or you may call (toll-free in USA and Canada) 1-866-773-1114, or (other countries) +1 727-733-1110.

Sincerely,

Iso-Quality Testing, Inc.

Examination Date

The ACLAM Certification Exam is administered throughout the United States and Canada, once a year, 2-3 weeks prior AVMA National Convention.

One is entitled to take the examination up to a maximum of three times during the next three years after becoming Board eligible.
Eligibility Requirements [https://www.aclam.org/certification/requirements](https://www.aclam.org/certification/requirements)

1. **Post-Graduate training**

   Candidates must have completed one of the following post-graduate training options following receipt of a veterinary medical degree by an AVMA accredited school, or after completing the requirements of the ECFGV or PAVE programs.

   a. **Training Program option:**

   Candidates must have completed a training program in laboratory animal medicine. The training program must be completed by the application deadline, and must:

   - Meet the ACLAM Training Program Minimal Standards,
   - Be at least two years in duration, and
   - Be recognized by ACLAM, with a Diplomate serving as director

   **NOTE:** Applicants in a laboratory animal medicine training program (whether ACLAM recognized or not) may count as relevant, direct performance or participation in activities that characterize full-time experience in laboratory animal medicine whether the candidate has completed the program or not.

   b. **Experience option:**

   Candidates may qualify to take the examination after 6 years of relevant, full-time experience in laboratory animal medicine following receipt of a veterinary medical degree. Experience duration is calculated up to the time of the application deadline. Graduate training and professional employment pursued in parallel (at the same time) cannot be counted twice to meet the experiential requirements. That is, each calendar day can only be counted once toward the experience requirements for the purposes of ACLAM credentialing, no matter how many hours are worked or different activities pursued.

   Experience comprises both a time and quality component. It is defined as the direct performance or participation in activities that characterize the laboratory animal specialist. These activities include:

   - clinical medicine involving laboratory animal species
   - animal resource management
   - technician/investigator teaching and training
   - consultation on laboratory animal medicine topics
   - formal teaching and research
   - participation in organized laboratory animal medicine
To qualify for experience credit, 20% of an activity’s focus must be on laboratory animal medicine. Qualifying experience need not include all these activities but engaging in only one or two of the activities may not be enough to qualify a candidate.

**Part-Time Experience:** Part-time experience is calculated based on the portion of time spent in laboratory animal medicine-related work, based on the following formula:

- 1 year in a part-time (50%) laboratory animal medicine-related position = 6 months experience credit

**Other Professional Experience:** Up to 1 year of credit is given for experience from activities outside of the laboratory animal medicine field (such as private veterinary practice, meat inspection, or teaching subjects unrelated to laboratory animal medicine) using the following formula:

- 6 months of non-laboratory animal medicine professional experience = 1-month experience credit

Up to 2 years of experience credit will be given for graduate or post-veterinary medical degree research programs (such as residencies other than formal laboratory animal medicine programs, or post-doctoral research training positions) that include the use of animals, based on the following formula:

- 2 months of program participation = 1-month experience credit

2. **Publication:** The publication requirement demonstrates that candidates have a clear working knowledge of the scientific method used to explore questions in the biological sciences. Serving as first author of an original research article demonstrates application of the scientific method, and most paper topics will fall under the biological sciences. For topics outside the biological sciences, the manuscripts must otherwise be relevant to laboratory animal science. This article must be published in a peer-reviewed journal and be fully accepted at the time of application. Submitting work that is in the review process, even if conditionally accepted with revisions, does not fulfill the requirement, as the peer-review process is not complete until the paper has been accepted for publication.

By convention, first authorship denotes the individual who was primarily responsible for the conduct of the study and the preparation of the paper resulting from the study. Even though others may have contributed to the study, only the first author will be credited with the publication for the purposes of the ACLAM credentialing process.

An original scientific article should contain the following elements:

- Introduction that contains information which provides support and serves as a basis for the study.
- A statement of the hypothesis or question under study.
- A materials and methods section that delineates how the study was conducted.
- A section containing results of the study.
A section that analyzes the results of the study.

A conclusion, summary or abstract that concisely states the findings of the study and places them in perspective.

Acceptable Publication Topics

As the investigation of biological processes by the scientific method is similar regardless of the organism or system studied, ACLAM will accept publications relating to a variety of subjects, such as molecular mechanisms, cultured cells, human subjects, or other organisms (including invertebrates and single-celled organisms) outside of the animal species most commonly used in biomedical research.

Publications in the physical sciences or other scientific area may also be acceptable. However, these publications must meet the additional test of relevance to laboratory animal medicine. For example, a study examining temperature and humidity monitoring and control systems might be acceptable if it is in the context of a laboratory animal facility or housing system design. In all cases, the scientific method must be followed.

Unacceptable Publication Types

Certain publication types do not meet the requirements for ACLAM certification, as they do not demonstrate the required mastery of the scientific method.

Review Article: A review of the existing literature on a subject, organized so that the important components of individual studies are compiled into a realistic picture of the subject being reviewed. Such articles do not demonstrate many of the components of the scientific method; there is no single hypothesis or question to be answered, no study design, and no data collected in a form that can be statistically analyzed or otherwise compared.

Case Report: Case reports present information gleaned from clinical observations or a collection of diagnostic information which characterize a clinical condition in one or more individuals. They lack a clearly stated hypothesis and concurrent controls used for comparison to affected or treated groups. Conclusions are usually presumptive; there is no statistical basis for establishing that they do not occur by chance or due to causes that could not be ruled out by the conditions under which the data was collected.

Conditionally Acceptable Publication Types

Epidemiologic Research Paper: Epidemiologic research papers, such as prospective cohort studies or retrospective studies, may contain all the elements of a scientific paper. However, retrospective studies cannot be considered acceptable unless they contain all the elements listed above and have a clearly stated or inferred hypothesis that is examined by comparison of case and control groups with statistical analysis and comparisons of those groups. If these elements are clearly present, then epidemiologic studies are considered acceptable for the purposes of ACLAM credentials.
Criteria for Pre-Review Manuscript Submission - January 2017

Applicants can request an optional pre-review of their published manuscript from the American College of Laboratory Animal Medicine (ACLAM) Credentials Committee (CC). The pre-review process allows the preliminary evaluation of published manuscripts to be submitted to the ACLAM CC from potential applicants aside from the traditional approach (e.g. during the application for certification eligibility). Requests for pre-review will assist candidates by providing early feedback on whether a manuscript satisfies credentialing requirements prior to applying for the ACLAM certifying examination. Please send your manuscript that has been published or accepted for publication to the ACLAM Executive Director- Dr. Mel Balk- mwbaclam@gsinet.net.

The following criteria are required prior to the pre-review process:

- Prior to submission for pre-review approval, the manuscript under review must be accepted for publication by a peer-reviewed journal.
- The applicant must be first or sole author and the publication must have resulted from the applicant's research or clinical investigation.
- Only one publication per applicant may be submitted annually for pre-review. Requests must be made by August 15. Some peer-reviewed journals allow co-first authorship on manuscripts. Co-first authorship should only occur when both first authors have made equally substantial contributions to the conception or design of the work; the acquisition, analysis, or interpretation of data for the work; and equally contributed to drafting the work or revising it critically for important intellectual content. Co-first authorship is acceptable for manuscript pre-review submission; however, applicants must show evidence of designation as a first author when submitting their manuscript for review.
- All decisions by the ACLAM CC during the pre-review process are final. Pre-review manuscript evaluations by the ACLAM CC will be in accordance with the current requirements in effect at the time the manuscript was submitted for early approval. Applicants will be notified of the outcome following the annual Credentials Committee meeting/review period.
- The manuscript must follow a scientific approach with all the elements required for the ACLAM credentialing process and as described in the publication requirements for certification eligibility. [https://www.aclam.org/certification/requirements](https://www.aclam.org/certification/requirements).
- In the event of change with ACLAM publication requirements, and if a potential applicant has not yet met eligibility requirements, the pre-review approval is good for three years after the acceptance date of the new publication requirements.

Admission to the Examination

You MUST present your admission letter and a VALID GOVERNMENT ISSUED PHOTO ID WITH SIGNATURE in order to be admitted to the examination. Approved forms for ID are: Driver’s License, Government Issued ID Card (must have photo and signature), Passport, Military ID Card. No other forms of identification will be accepted. The name on your admission letter must match the name on your photo ID. Please refer to your admission letter for additional information. The admission letter includes:
Examination Content Outline

The ACLAM Role Delineation Document identified 6 domains for the ACLAM certification exam. Within each performance domain are several identified tasks which provide the basis for questions in the examination. Following is a brief outline of those domains and the tasks which fall under each domain. Also included is the percentage of questions per domain included in the examination.

Domain 1: Management of Spontaneous and Experimentally Induced Diseases and Conditions (25%)

Tasks:

- Prevent spontaneous or unintended disease or condition
- Control spontaneous or unintended disease or condition
- Diagnose disease or condition as appropriate
- Treat disease or condition as appropriate

Domain 2: Management of Pain and Distress (10%)

Tasks:

- Recognize pain and/or distress
- Minimize or eliminate pain and/or distress
- Euthanize
Domain 3: Research (20%)

Tasks:
- Facilitate or provide research support
- Advise and consult with investigators on matters related to their research
- Design and conduct studies

Domain 4: Animal Care (24%)

Tasks:
- Develop animal husbandry programs
- Manage or provide indirect management/oversight of animal husbandry programs
- Manage or provide indirect management/oversight of laboratory animal facilities

Domain 5: Regulatory responsibilities (19%)

Tasks:
- Perform direct or delegated Attending Veterinarian responsibilities
- Advocate for humane care and use of animals
- Provide advice to occupational health and safety programs
- Provide advice on biological, chemical and radiation hazards in an animal research program
- Serve as a member of the IACUC
- Review protocols and provide advice to investigators and the IACUC

Domain 6: Education (2%)

Tasks:
- Train personnel in animal care and use
- Maintain current knowledge and continued competence in laboratory animal medicine
Sample Questions

The questions on the ACLAM Certification Exam were developed from the tasks identified in the Role Delineation Document. Multiple sources were utilized in the development of examination questions. Each question is linked to one of the role delineation task statements as well as the knowledge and skills identified for each task statement. A summary of the tasks is listed in this brochure under Examination Content. For a complete list of tasks and their related knowledge and skills, please see the ACLAM Role Delineation Document.

The following is taken from the instructions that will be read to you prior to taking the examination:

The questions in the examination are multiple-choice with four or five choices: A, B, C, D, and E. There is only one correct choice for each question. Carefully read each question and all the choices before making a selection. Choose the single best answer. Mark only one answer for each question. You will not be given credit for any question for which you indicate more than one answer. It is advisable to answer every question, since your final score will be determined by the number of questions answered correctly. There is no penalty for guessing.

Sample examination questions:

1. How is pain produced in the writhing test?
   - A. Colonic-rectal distention
   - B. Duodenal distention
   - C. Intraperitoneal irritation
   - D. Urinary tract distention

2. What lentivirus model results in clinical disease?
   - A. SRV-1 in a rhesus monkey
   - B. SIVsm in a rhesus monkey
   - C. SIVsm in a sooty mangabey
   - D. SIVagm in an African green monkey
   - E. SRV-2 in an African green monkey

3. Which environmental modification INCREASES agonistic behavior in NIH/S male mice?
Answers to Sample Test Questions

1. C
2. B
3. A

Exam Disclosure

Candidates must not disclose any information contained within the examination to anyone once they leave the examination room. Candidates should also be aware that in the case of a score appeal, exam security and item-banking procedures do not permit candidates access to test questions, answer keys, or other secure materials.

For more information, contact ACLAM:

Dr. Melvin Balk - Executive Director

TEL- 603-887-2467, FAX 603- 887-0096.

E-mail: mwbaclam@gsinet.net.

Address: 96 Chester St. Chester, NH 03036. USA
Scoring

SMT scores the exam after consultation with the Exam Committee. The results are presented to the BOD at their meeting at the AVMA National Convention. Exam results are sent by e mail following that meeting. For candidates not passing, scores will be broken down by category so candidates can see areas of strength and weakness.

An established equating model is used to standardize the difficulty of all versions of the test and determine the passing point. Scores are calculated based on the total number of questions answered correctly.