

AALAS LABORATORY ANIMAL TECHNOLOGIST (LATG) PRACTICE TEST (SAMPLE) STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

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THE FULL VERSION STUDY GUIDE**

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Introduction

Preparing for a certification exam can feel overwhelming, but with the right tools, it becomes an opportunity to build confidence, sharpen your skills, and move one step closer to your goals. At Examzify, we believe that effective exam preparation isn't just about memorization, it's about understanding the material, identifying knowledge gaps, and building the test-taking strategies that lead to success.

This guide was designed to help you do exactly that.

Whether you're preparing for a licensing exam, professional certification, or entry-level qualification, this book offers structured practice to reinforce key concepts. You'll find a wide range of multiple-choice questions, each followed by clear explanations to help you understand not just the right answer, but why it's correct.

The content in this guide is based on real-world exam objectives and aligned with the types of questions and topics commonly found on official tests. It's ideal for learners who want to:

- Practice answering questions under realistic conditions,
- Improve accuracy and speed,
- Review explanations to strengthen weak areas, and
- Approach the exam with greater confidence.

We recommend using this book not as a stand-alone study tool, but alongside other resources like flashcards, textbooks, or hands-on training. For best results, we recommend working through each question, reflecting on the explanation provided, and revisiting the topics that challenge you most.

Remember: successful test preparation isn't about getting every question right the first time, it's about learning from your mistakes and improving over time. Stay focused, trust the process, and know that every page you turn brings you closer to success.

Let's begin.

How to Use This Guide

This guide is designed to help you study more effectively and approach your exam with confidence. Whether you're reviewing for the first time or doing a final refresh, here's how to get the most out of your Examzify study guide:

1. Start with a Diagnostic Review

Skim through the questions to get a sense of what you know and what you need to focus on. Your goal is to identify knowledge gaps early.

2. Study in Short, Focused Sessions

Break your study time into manageable blocks (e.g. 30 – 45 minutes). Review a handful of questions, reflect on the explanations.

3. Learn from the Explanations

After answering a question, always read the explanation, even if you got it right. It reinforces key points, corrects misunderstandings, and teaches subtle distinctions between similar answers.

4. Track Your Progress

Use bookmarks or notes (if reading digitally) to mark difficult questions. Revisit these regularly and track improvements over time.

5. Simulate the Real Exam

Once you're comfortable, try taking a full set of questions without pausing. Set a timer and simulate test-day conditions to build confidence and time management skills.

6. Repeat and Review

Don't just study once, repetition builds retention. Re-attempt questions after a few days and revisit explanations to reinforce learning. Pair this guide with other Examzify tools like flashcards, and digital practice tests to strengthen your preparation across formats.

There's no single right way to study, but consistent, thoughtful effort always wins. Use this guide flexibly, adapt the tips above to fit your pace and learning style. You've got this!

Questions

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- 1. Personnel should be encouraged to report the presence of anyone who is in the animal facility and who does not seem familiar with its layout.**
 - A. True
 - B. False
 - C. Only when unfamiliar to the staff
 - D. Only after security review
- 2. What publication gives detailed descriptions of the different biosafety levels that are used to describe work with infectious agents?**
 - A. Biosafety in Microbiological and Biomedical Laboratories
 - B. Occupational Health and Safety in the Care and Use of Laboratory Animals
 - C. Guide to the Care and Use of Laboratory Animals
 - D. U.S. Government Principles for the Utilization and Care of Vertebrate Animals Used in Testing, Research, and Training
- 3. The goal of security-related SOPs is to make the facility staff 'rule enforcers'.**
 - A. True
 - B. False
 - C. Partially true
 - D. Unknown
- 4. The _____ provides the body with its first line of defense against foreign substances.**
 - A. Innate immune system
 - B. Lymphocyte
 - C. T cell
 - D. Antibody
- 5. Which drug is commonly used to treat endoparasites?**
 - A. Miconazole
 - B. Amitraz
 - C. Ivermectin
 - D. Penicillin

- 6. Which is the most abundant immunoglobulin in mammalian serum?**
- A. IgA
 - B. IgD
 - C. IgE
 - D. IgG
- 7. What term describes disruption of endogenous genes caused by the integration of a transgene into the genome?**
- A. Sequential disruption
 - B. Transgenetic modification
 - C. Insertional mutation
 - D. Integrational insertion
- 8. What is a good reference for those responsible for managing controlled substances?**
- A. Guide for the Care and Use of Laboratory Animals
 - B. DEA's Practitioner's Manual
 - C. PHS Policy
 - D. Animal Welfare Act
- 9. Which feature distinguishes gene-targeted mutation from pronuclear injection?**
- A. It results in random insertion of the transgene
 - B. It uses non-homologous end joining to integrate at any site
 - C. It inserts the transgene at a defined locus using homologous sequences
 - D. It cannot create heritable changes
- 10. Liquid nitrogen should always be stored in a sealed leak-proof container.**
- A. True
 - B. False
 - C. Not applicable
 - D. Depends on usage

Answers

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1. A
2. A
3. B
4. A
5. C
6. D
7. C
8. B
9. C
10. B

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Explanations

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1. Personnel should be encouraged to report the presence of anyone who is in the animal facility and who does not seem familiar with its layout.

A. True

B. False

C. Only when unfamiliar to the staff

D. Only after security review

Encourage a safety-focused culture where anyone in the animal facility who does not appear familiar with the layout is reported. This helps ensure that only trained and authorized individuals are present in restricted areas, supports proper supervision and escorting of visitors, and reduces risk of accidental injuries, animal exposure, or security breaches. When staff notice someone who seems unfamiliar, reporting allows a quick check by a supervisor or security to verify training, authorization, and appropriate access. If you were told not to report, or to report only under special circumstances, you'd be weakening this layer of protection. Delaying reporting until security review can miss a window where immediate verification or escort is needed, and limiting reporting to situations where the staff themselves are unfamiliar ignores the potential risk posed by someone who is not properly oriented or supervised.

2. What publication gives detailed descriptions of the different biosafety levels that are used to describe work with infectious agents?

A. Biosafety in Microbiological and Biomedical Laboratories

B. Occupational Health and Safety in the Care and Use of Laboratory Animals

C. Guide to the Care and Use of Laboratory Animals

D. U.S. Government Principles for the Utilization and Care of Vertebrate Animals Used in Testing, Research, and Training

The main concept being tested is knowing the standard reference that defines containment levels for work with infectious agents. Biosafety in Microbiological and Biomedical Laboratories is the authoritative publication that outlines the biosafety levels (BSL-1 through BSL-4) and explains the corresponding facility features, practices, equipment, PPE, and training required for handling different agents. It provides guidance on when to escalate containment based on agent risk, plus incident response and program components for maintaining biosafety in labs. The other publications focus on animal care, welfare, or occupational health in animal research rather than providing the framework for containment levels of infectious agents, so they don't serve as the reference for biosafety level descriptions.

3. The goal of security-related SOPs is to make the facility staff 'rule enforcers'.

A. True

B. False

C. Partially true

D. Unknown

Security-related SOPs aim to create safe, consistent operations by clearly outlining who can access restricted areas, how to verify identity, how to handle keys and credentials, how to document security incidents, and how to respond to potential breaches. When staff follow these procedures, the facility reduces risks to people, animals, and assets and maintains auditable records of compliance. The goal is not to turn staff into enforcers policing their coworkers; instead, it's to provide clear, practical steps so actions are predictable, compliant, and traceable. Enforcement and oversight are typically handled by supervisors and security personnel, while the SOPs support everyone in doing the right thing.

4. The _____ provides the body with its first line of defense against foreign substances.

A. Innate immune system

B. Lymphocyte

C. T cell

D. Antibody

The innate immune system provides the body's first line of defense against foreign substances. It offers immediate, non-specific protection at entry points like the skin and mucous membranes. This includes physical barriers (skin, mucous membranes), chemical barriers (acidic pH, enzymes), and cellular defenses (phagocytes such as neutrophils and macrophages) that respond quickly to a wide range of invaders. In contrast, lymphocytes, T cells, and antibodies belong to the adaptive immune system, which responds more slowly on first exposure but targets specific pathogens and can remember them for faster future responses. Because the question asks about the initial, non-specific defense, the innate immune system is the best fit.

5. Which drug is commonly used to treat endoparasites?

A. Miconazole

B. Amitraz

C. Ivermectin

D. Penicillin

Treating internal parasites requires a systemic agent that acts on parasites living inside the animal. Ivermectin is a broad spectrum anthelmintic commonly used to eliminate endoparasites such as gastrointestinal nematodes and other internal parasites. It works by affecting the parasite's nervous system, causing paralysis and death, while being suitable for many host species at appropriate doses. The other drugs target different things: miconazole is an antifungal used for fungal infections, amitraz is used against external parasites like mites and ticks, and penicillin targets bacteria. Because it specifically treats internal parasites, ivermectin is the best choice.

6. Which is the most abundant immunoglobulin in mammalian serum?

A. IgA

B. IgD

C. IgE

D. IgG

IgG is the most abundant immunoglobulin in mammalian serum. It remains in circulation longer than other isotypes thanks to recycling by the neonatal Fc receptor, giving it a long half-life and allowing large quantities to accumulate in the blood. Its monomer form is small and versatile, circulating freely to provide systemic immunity through neutralization of pathogens, opsonization to enhance phagocytosis, and activation of the classical complement pathway. In contrast, IgA is mainly found in secretions and mucosal surfaces, IgM is produced early and often exists as a pentamer with higher local activity in initial responses, and IgD and IgE are present in much lower concentrations in serum. These factors together make IgG the predominant circulating antibody in most mammals.

7. What term describes disruption of endogenous genes caused by the integration of a transgene into the genome?

- A. Sequential disruption
- B. Transgenetic modification
- C. Insertional mutation**
- D. Integrational insertion

Disruption of endogenous genes caused by inserting a transgene into the genome is described as insertional mutation. When the transgene lands inside a native gene or its regulatory regions, it can interrupt coding sequences, splice sites, or promoter elements, altering or abolishing the gene's normal function. This insertional event is a mutagenic effect specifically from the integrated DNA. The other terms don't capture this mechanism: there isn't a standard concept called sequential disruption or integrational insertion, and transgenetic modification is a broader term for making genetic changes, not the specific disruption caused by integration.

8. What is a good reference for those responsible for managing controlled substances?

- A. Guide for the Care and Use of Laboratory Animals
- B. DEA's Practitioner's Manual**
- C. PHS Policy
- D. Animal Welfare Act

When handling controlled substances in a lab setting, you need a reference that directly covers the rules and practical steps for those substances. The DEA's Practitioner's Manual provides exactly that guidance: it outlines how to register for possession, how to keep and secure an accurate inventory, how to dispense and document usage, requirements for recordkeeping, safe storage, disposal, and procedures to follow if a loss or theft occurs. This resource is tailored for people responsible for managing controlled substances, aligning with the Controlled Substances Act and DEA expectations. The other references focus on broader animal care, welfare policies, or federal policy requirements unrelated to the detailed management of controlled substances. The Guide for the Care and Use of Laboratory Animals centers on humane treatment and ethical considerations for animal research, not the regulatory handling of restricted drugs. PHS Policy covers overarching federal policies for animal care in PHS-funded work, not the nuts and bolts of controlled-substance compliance. The Animal Welfare Act sets legal protections for animals but does not provide the procedural guidance needed for inventory, storage, and recordkeeping of controlled substances. So, for day-to-day management specifics and compliance, the DEA's Practitioner's Manual is the most appropriate reference.

9. Which feature distinguishes gene-targeted mutation from pronuclear injection?

- A. It results in random insertion of the transgene
- B. It uses non-homologous end joining to integrate at any site
- C. It inserts the transgene at a defined locus using homologous sequences**
- D. It cannot create heritable changes

The key idea is how the DNA is inserted. Gene-targeted mutations are designed to modify a gene at a specific location by using DNA sequences that match the regions around the target site. This homology guides the cell's repair machinery to insert or alter the genome precisely at that defined locus, typically through homologous recombination or homology-directed repair. This precise, locus-specific insertion is what sets gene-targeted mutation apart. In contrast, pronuclear injection introduces DNA into a zygote without precise guidance, so the DNA often integrates at random sites in the genome, with varying copy numbers and insertion orientations. This lack of control over the insertion location is why random integration is a hallmark of pronuclear injection rather than gene-targeted approaches. So the distinguishing feature is the defined locus insertion using homologous sequences, which is why the correct statement emphasizes targeted, locus-specific modification.

10. Liquid nitrogen should always be stored in a sealed leak-proof container.

- A. True
- B. False**
- C. Not applicable
- D. Depends on usage

Liquid nitrogen boils and turns into gas even at cryogenic temperatures. That gas must escape to prevent pressure from building up inside the container. Storage dewars are designed with vents or pressure-relief systems and are not truly sealed. If you tried to keep LN2 in a sealed container, the expanding gas could over-pressurize and cause the container to fail, creating safety hazards. So, storing liquid nitrogen in a sealed leak-proof container is not appropriate; it should be kept in vented cryogenic dewars.

Next Steps

Congratulations on reaching the final section of this guide. You've taken a meaningful step toward passing your certification exam and advancing your career.

As you continue preparing, remember that consistent practice, review, and self-reflection are key to success. Make time to revisit difficult topics, simulate exam conditions, and track your progress along the way.

If you need help, have suggestions, or want to share feedback, we'd love to hear from you. Reach out to our team at hello@examzify.com.

Or visit your dedicated course page for more study tools and resources:

<https://aalaslatg.examzify.com>

We wish you the very best on your exam journey. You've got this!

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