

Certified Manager of Animal Resources (CMAR) AR Practice Exam (Sample)

Study Guide



Everything you need from our exam experts!

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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. What is the primary purpose of determining an appropriate sample size in an animal study?**
 - A. To ensure the number of animals used is statistically relevant.**
 - B. To minimize costs and resources.**
 - C. To maximize variability in the data.**
 - D. To ensure randomization procedures are followed.**

- 2. Which term refers to operating steps or SOPs designed to ensure consistency and compliance in animal care practices?**
 - A. Policies**
 - B. Principles**
 - C. Procedures**
 - D. Must**

- 3. Which anticoagulant is in a purple-top tube?**
 - A. Heparin**
 - B. EDTA**
 - C. Citrate**
 - D. Oxalate**

- 4. Which of the following is an inbred strain of mice?**
 - A. CD1**
 - B. Swiss Webster**
 - C. ICR**
 - D. BALB/c**

- 5. In most birds, which ovary and oviduct are functional?**
 - A. Left ovary and oviduct**
 - B. Right ovary and oviduct**
 - C. Both ovaries and oviducts**
 - D. None functional**

- 6. An Animal Facility is defined as which of the following?**
- A. Any building, room, or area used for confinement, transport, or experiments where animals are kept there for more than 24 hours**
 - B. A space used only for temporary animal housing under 12 hours**
 - C. A public pet store facility**
 - D. A veterinary clinic**
- 7. Which variable is manipulated by the investigator?**
- A. Dependent variable**
 - B. Control variable**
 - C. Confounding variable**
 - D. Independent variable**
- 8. Which statement correctly describes Gram-positive bacteria?**
- A. Stain red due to a thin cell wall with high lipid content**
 - B. Stain dark blue/violet due to a thick cell wall**
 - C. Stain green due to mycolic acids**
 - D. Stain colorless in Gram stain**
- 9. GLP - Test Article is defined as which of the following?**
- A. Any article subject to regulation under the FDA**
 - B. A substance used as a solvent in an assay**
 - C. An inert material for calibration**
 - D. A control article**
- 10. Which GUIDE item are operating procedures or SOPs that detail step-by-step processes to ensure the consistent application of institutional practices and can assist in compliance and facility management?**
- A. Must**
 - B. Policies**
 - C. Principles**
 - D. Procedures**

Answers

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

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Explanations

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1. What is the primary purpose of determining an appropriate sample size in an animal study?

- A. To ensure the number of animals used is statistically relevant.**
- B. To minimize costs and resources.**
- C. To maximize variability in the data.**
- D. To ensure randomization procedures are followed.**

The main idea here is to choose a sample size that provides enough statistical power to reliably detect a real treatment effect, while using as few animals as possible. In practice, power is the probability of finding a true effect if one exists. It depends on the expected size of the effect, how much the data vary, and the study's significance threshold. If you enroll too few animals, you risk a Type II error—missing a real difference because the study isn't sensitive enough. If you enroll more animals than needed, you're using more animals than necessary without adding meaningful scientific value, which raises ethical and resource concerns. The sample size needed also depends on how big an effect you expect and how variable your data are. Large expected effects or low variability require fewer animals to reach adequate power; small effects or high variability require more. While cost and resources and the logistics of randomization are important, they're secondary to ensuring the study can make a reliable conclusion with an appropriate number of animals.

2. Which term refers to operating steps or SOPs designed to ensure consistency and compliance in animal care practices?

- A. Policies**
- B. Principles**
- C. Procedures**
- D. Must**

The idea being tested is how standardized, actionable guidance ensures consistent and compliant animal care. The term for operating steps or instructions that tell exactly how to perform tasks is procedures. Procedures lay out the specific steps, order, responsibilities, timing, and safety measures needed to carry out a task, so everyone performs it the same way every time. That consistency is essential for animal welfare, reproducibility of care, and meeting regulations or accreditation standards. Policies provide high-level rules about what should be achieved but not the exact how-to. Principles are broad beliefs or values guiding behavior. The word must isn't a formal term here; it's a modal indicating obligation rather than a defined practice type. So, procedures are the concrete, step-by-step instructions that ensure consistent and compliant animal care practices.

3. Which anticoagulant is in a purple-top tube?

- A. Heparin
- B. EDTA**
- C. Citrate
- D. Oxalate

The purple-top tube uses EDTA as the anticoagulant. EDTA works by binding calcium, which stops blood from clotting and helps preserve cellular details for accurate complete blood counts and other hematology analyses. The other colors correspond to different anticoagulants: green-top tubes contain heparin, blue-top tubes contain citrate, and gray-top tubes contain oxalate (often with fluoride). Since the purple-top tube is specifically associated with EDTA, that is the anticoagulant here.

4. Which of the following is an inbred strain of mice?

- A. CD1
- B. Swiss Webster
- C. ICR
- D. BALB/c**

Inbred strains are created by long-term brother-sister matings to produce nearly identical genetics across individuals, giving researchers a uniform background to study. BALB/c is a classic example of an inbred strain, maintained for many generations to maintain genetic and phenotypic consistency that's valuable for immunology and cancer research. The other strains listed are outbred stocks, kept to preserve genetic diversity and heterogeneity, which makes them less uniform for controlled experiments. That combination of consistent genetics and well-documented traits makes BALB/c the best choice.

5. In most birds, which ovary and oviduct are functional?

- A. Left ovary and oviduct**
- B. Right ovary and oviduct
- C. Both ovaries and oviducts
- D. None functional

Birds normally use only one side for reproduction—the left ovary and left oviduct. This setup helps keep the body lighter and more efficient for flight, since duplicating the full reproductive tract on both sides would add unnecessary weight and complexity. The left ovary develops eggs that will travel through the left oviduct, where they are surrounded by albumen, membranes, and eventually a shell before being laid. The right ovary and oviduct are typically reduced and nonfunctional in most species. So the left side being functional best fits the common pattern, making it the correct choice.

6. An Animal Facility is defined as which of the following?

- A. Any building, room, or area used for confinement, transport, or experiments where animals are kept there for more than 24 hours**
- B. A space used only for temporary animal housing under 12 hours**
- C. A public pet store facility**
- D. A veterinary clinic**

An animal facility is defined by places where animals are confined, transported, or used in experiments and kept there for more than 24 hours. The 24-hour threshold is key, distinguishing spaces that merely temporarily house animals from those that meet the scope of an animal facility. The option matches precisely because it includes any building, room, or area used for confinement, transport, or experiments with animals kept there longer than a day. The other choices fail because they describe scenarios that do not meet that combination of confinement/transport/experimental use with a stay exceeding 24 hours (a short-term housing under 24 hours), or describe facilities whose primary purpose isn't captured by this definition (such as a retail pet store or a veterinary clinic).

7. Which variable is manipulated by the investigator?

- A. Dependent variable**
- B. Control variable**
- C. Confounding variable**
- D. Independent variable**

In experimental design, the factor you deliberately change to see its effect is the independent variable. This is the variable the investigator manipulates to observe whether and how the outcome changes. The outcome you measure in response is the dependent variable. To ensure a clear link between the manipulation and the result, other factors are kept constant as control variables. If other, unintended factors creep in, they become confounding variables that can mislead conclusions about the effect of the manipulated variable. So, the element you actively adjust to test cause-and-effect is the independent variable.

8. Which statement correctly describes Gram-positive bacteria?

- A. Stain red due to a thin cell wall with high lipid content**
- B. Stain dark blue/violet due to a thick cell wall**
- C. Stain green due to mycolic acids**
- D. Stain colorless in Gram stain**

Gram-positive bacteria are defined by a thick peptidoglycan layer in their cell wall that traps the crystal violet-iodine complex during the decolorization step of the Gram stain. This retention makes them appear purple or violet under the microscope after the counterstain is applied. The thick wall and absence of an outer membrane prevent the stain from washing out, which is why they stay darkly colored. The statement describing them staining dark blue or violet because of a thick cell wall captures this key idea, so it's the best fit. In contrast, a red color after staining points to Gram-negative bacteria, a green color would be associated with staining targets like mycolic acid-containing organisms in acid-fast stains, and a colorless result would indicate an issue with the procedure rather than a feature of Gram-positive cells.

9. GLP - Test Article is defined as which of the following?

- A. Any article subject to regulation under the FDA**
- B. A substance used as a solvent in an assay**
- C. An inert material for calibration**
- D. A control article**

In GLP, a test article means any substance or item that is regulated by the FDA and is the object of the study. This broad scope ensures the GLP framework applies to drugs, biologics, formulations, and other regulated substances used in the study, not just a single type of material. The other options refer to specific items within a study—such as a solvent, a calibration material, or a control—that are important for the experiment, but they don't define what the test article itself is. Therefore, the definition that captures the whole concept is the one describing any article subject to regulation under the FDA.

10. Which GUIDE item are operating procedures or SOPs that detail step-by-step processes to ensure the consistent application of institutional practices and can assist in compliance and facility management?

A. Must

B. Policies

C. Principles

D. Procedures

The main idea is that SOPs are the concrete, step-by-step instructions used to perform tasks in a consistent, repeatable way. They lay out the exact sequence of actions, who is responsible, what tools or materials are needed, how to verify completion, and how to document results. This makes it possible to apply institutional practices uniformly and to demonstrate compliance in facility management, audits, and training. Procedures are the GUIDE item type that captures these actionable instructions. They translate broader rules into the specific steps someone needs to follow, ensuring consistency no matter who performs the task. In contrast, policies provide high-level rules and expectations rather than the how-to steps; principles are the foundational beliefs guiding behavior; and the term Must isn't a GUIDE item type but expresses obligation, not a procedural format. So the best fit for operating procedures or SOPs is Procedures.

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://cmarar.examzify.com>

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

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